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MALARIAL POISONING.

Inaugural Address

BY

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GENTLEMEN,

I beg to thank you very cordially for the honor you have done me in electing me to the office of President of the Bristol Medico-Chirurgical Society.

It has been the custom for the new President of each year to deliver an inaugural address upon some subject of medical or surgical science. To me it has been a matter of some difficulty to select a topic of sufficient interest without going over ground which has been fully and ably discussed by others many times over. The mine seems at first sight to be almost exhausted, and yet how vast is the undiscovered land to those who are seekers after Nature's truths. We live in days when busy brains are searching with all their powers for the ultimate causes of specific diseases, when the investigation for living organisms in the blood and animal tissues has become the absorbing object of modern pathological enquiry.

Professor Tyndall exclaims with characteristic enthusiasm: "The physician and the sanitarian have no longer to fight against phantoms—their enemy is revealed. It is not noxious gases, but organized germs—contagia are living things. Men and women have died that bacteria and bacilli might live!"

This is strong language!—ought we not to receive it with some caution, and, at all events, wait for further experiment and examination? Take for example the now famous discovery of the tubercle bacillus by Koch. No one doubts its existence, or that it is a particulate and demonstrable fact. But are we certain that the deductions drawn from its discovery are true? Is it yet a settled question whether it is the cause or the consequence of phthisis? Does not the subject require still more elucidation before we can accept it as an incontrovertible basis for a theory of the causation of consumption?

All honor however to the worker! He has certainly added another solid stone to the arch which may yet be filled in and completed, he has erected another sign post which may yet guide us to the end. Thus it is "that in the discovery of truth of every kind, in the development of man's powers and privileges, each generation has its assigned part, and it is for us to endeavour to perform our portion of this perpetual task to our species."

To do this in spite of failure, to add spark by spark to the light until darkness and doubt pass away, is, and ever will be, the highest aim of the students of medical science.

May I trespass on your patience and ask you to follow me for a little, while I direct your attention to a view of the present state of our knowledge with regard to the

nature of the malarial poison, and to some of its pathological effects upon the human organism. The subject is still in many respects clouded in mystery, but there are a certain number of tolerably well authenticated facts belonging to it, which we may appropriate, and by gathering them together we may be able to obtain a view of the question which I hope may not be without some interest to you.

It would be impossible, I need not say, in the brief space at my disposal to enter into any exhaustive discussion of this question. It would require a whole course of lectures to unfold and unravel the different aspects which are presented to our view in studying the subject of malarial poisoning. Its geographical distribution; its strange clinging to certain regions and districts; the perplexity which meets us when we try to fix its origin and charge it upon the assemblage together of certain physical facts in certain localities; that no race, nationality, or colour, enjoy any immunity from its influence; that all periods of life are liable to it, even down to the infant *in utero*; that some of the fairest and loveliest places on the earth are rendered well nigh uninhabitable by it—are all notorious and well ascertained facts. I need not enlarge upon them; I would rather select from among the vast amount of material which has been collected, one or two prominent and salient features which seem to show that in the study of malaria we are dealing with a poison germ, an active *materies morbi*.

Some observers have gone so far as to state that there is no such thing as malaria in existence. They regard intermittent and remittent fever, cholera and insolation, as manifestations of one great type of fever; they declare that telluric emanations have nothing to do

with these fevers, and that the whole of their history and geographical distribution, their etiology, and destructive effects, are explicable on the hypothesis of alternations of temperature suddenly acting upon the human body.

What is malaria? The question is not yet answered, but I for one do not doubt that it will be. An enormous impetus has been given of late years to the investigation of the ultimate factors of acute febrile diseases. Who can set limits to the work yet to be done by such manipulators as Pasteur, Koch and others?

Efforts have not been wanting thus to search for the special poison germ of malaria. Since the days of Varro —a century before Christ—down to the present time, investigations have been made to solve the riddle: low forms of vegetable life, the algæ of the Pontine marshes, emanations from the soil in the form of gases forced out by the rise and fall of the subsoil water—these in their turn have been considered the factors in causing the phenomena of malarial poisoning.

A few years ago two distinguished workers, Klebs and Tommasi-Crudeli, conducted a series of investigations into the question. They found bacilli in the air and water of the Roman marshes, which they submitted to a process of cultivation. The results are thus described by Sir Joseph Fayrer:—

Rabbits inoculated with washings from the soil, or with fluids in which the bacillus has been cultivated, suffered from intermittent fever.

Filtered liquids caused only slight symptoms.

All the animals with fever had great enlargement of the spleen.

Many of the spleens exhibited pigmentation.

The bacilli were found in the spleens and marrow of the animals as well as in the soil.

The spores of the bacillus were, according to Crudeli, constantly found in the blood of the infected rabbits.

Venous blood from ague patients gave intermittent fever to dogs when introduced into the veins. Crudeli considers that the rigors of ague are produced by the irritation of the bacilli upon the vaso-motor centres.

It would seem at first sight, after these experiments and those of others in France, Italy and Algeria, that the mystery had been solved at last, and the crowning triumph seemed to have been reached when Dr. Aitken, of Rome, exhibited specimens of malarial bacillus at the meeting of the British Medical Association at Cambridge. But, alas! for the fate of this theory, other workers appeared, both from the United States and India. A medical officer of the United States army, Dr. Sternberg, found in the soil, water and air of New Orleans (the head-quarters of malaria) algæ and bacteriæ in various forms, some resembling those of Klebs and Crudeli, and they found also that they were capable under cultivation of acquiring virulent properties when injected into the blood of some of the lower animals, but that they do *not* produce the peculiar paroxysmal phenomena of intermittent fever. He found that the experiments on rabbits are not conclusive, as healthy rabbits exhibit remarkable variations in daily temperature, and finally that the hypodermic injection of human saliva will produce in the rabbit the same pathological effects as those which are alleged by Klebs and Crudeli to have followed from the introduction of the so-called malarial bacillus; in short, the investigations of this keen and crucial observer go far to show that the theories of Klebs and Crudeli are

untenable, and that the clinical and pathological results they have alleged to have followed from the introduction of the bacillus are neither more nor less than the symptoms of blood poisoning.

Then the organism has not been found in other places where malarial fevers are prevalent.

Klebs and Crudeli affirm that the bacillus abounds in the blood of persons suffering from ague, but other observers have failed to discover it, and Dr. Oldham, of the Bengal Medical Service, has injected blood taken from a patient in this condition without effect into his own circulation. The verdict therefore which must be passed at present upon the theory of Klebs and Crudeli is that of the Scotch jury, which neither condemns nor acquits but leaves the matter not proven.

Consequently our attitude as to the determination of the malarial poison as a separate, particulate, and demonstrable material, must be one of expectancy, and an expectancy which has received an additional and very powerful stimulus by the investigations to which I have referred.

There are, however, some other characteristics of the malarial poison which appear to afford indirect evidence of its physical and material character, and one is especially the very strong proofs which have been adduced as to the poison being conveyed by the contamination of potable water. There are several interesting facts bearing upon this point; I will however confine myself to two instances recently published which appear to establish this fact in a remarkable manner.

One is a report on the prevalence of intermittent fever among the troops quartered at Tilbury Fort, on the left bank of the Thames nearly opposite Gravesend.

Tilbury Fort, in the Essex marshes, is supplied with *rain* water, which is collected on the roofs of various buildings and, before entering two large cemented tanks placed underground, passes through charcoal filters. A body of troops arrived at the fort on the 18th December, 1873, and remained until July, 1874. During this period the tanks were under repair and empty, and the troops were supplied with *spring* water for drinking and cooking purposes from the railway station. The tank water was not used at all. Only one case of ague occurred in the garrison in this period of seven months.

After the tanks had been repaired and came again into use, a fresh body of troops came to the garrison to relieve those already alluded to, and in the course of six months 12 per cent. of their number were attacked with intermittent fever. These troops used during this time *not* the spring water from the railway station, but the rain water from the underground tanks.

The fair assumption therefore was, that these rain-tanks being sunk in marshy ground, the malarial poison had percolated with the subsoil water through the walls of the tanks and contaminated the water, and that the malarial poison had thus gained access to the men. This assumption was strengthened by the fact that there were no other cases among the civil population in the neighbourhood at the time.

Another remarkable instance bearing upon this point has been recorded recently by Dr. Charles Smart, of the United States army.

In the Rocky Mountain regions of North America there prevails a fever which has received the popular name of "mountain" fever. The special outbreak to which I refer occurred at Fort Bridges, in Wyoming

Territory. Dr. Smart spent several months in the examination of the various springs, wells and river waters, used as potable waters by the civil and military population. The fever to which I allude has been spoken of as a malarial fever, a malarial remittent. Dr. Smart describes it as follows:—

1. A primary stage of one or two weeks, during which the individual is more or less oppressed by the influence of the *materies morbi*.

2. Development of fever, with irregular remission and much more depression and muscular prostration than the patient's pulse and temperature would lead the observer to expect.

3. A typhoid stage, marked by prostration, low delirium and coma-vigil.

This fever is very amenable to treatment by quinine. It is certainly not enteric fever. The symptoms and post-mortem appearances entirely exclude that. It could not be traced to local surroundings. The fact that it is rapidly cured by quinine gave strong assumption of its malarial origin, and yet there was nothing apparently malarious in the locality, which is 7,000 feet above the sea level. The question arose: how was the fever caused? After a long and patient investigation Dr. Smart came to these conclusions:—That the potable water used was taken from the mountain streams flowing from the snow ranges; that on analysis he found in this water a large amount of albuminoid ammonia; and that in the snow which forms the source of these streams he found a still larger amount, indicating the presence of a considerable quantity of organic matter. He concludes that the malarial poison is swept up from the plains with the organic matter, and is precipitated by the snow. He takes the organic matter

as a measure of the malarious poison in water, just as carbonic acid is taken as measure of impurity in air, the intensity of the disease being a measure of the dose of the poison. The most remarkable fact is, that the cases coincide with the melting of the snow, and the locality is quite free from fever when there is no snow on the hills.

These interesting observations afford a tolerably clear assumption that the *materies morbi* of malarial fevers is an organic germ floating about in the air we breathe, and capable of introduction into the human system through the medium of the food we eat or the water we drink.

The pathological effects of the malarial poison upon the human organism are protean in their forms; varying from the intense saturation of the system, as evidenced by the most deadly form of paludal fever, attended with stupor, coma, and death in a few hours or days, to the gradual, slow, but sure process of infection exhibited among persons who have resided all their lives in marshy and malarious districts, and who present those signs of chronic malarial poisoning which once seen can never be forgotten.

Scarcely any organ in the body seems to escape the influence of this poison, and this too may be seen in persons who have never had an attack of ague or fever in their lives.

As an instance of the rapid and disastrous results of this poison in its most virulent form I may recall the celebrated Walcheren expedition in 1804. The expedition was one of the most magnificent which ever left the shores of England, and consisted of a force of 36,481 rank and file and 1,738 officers. The campaign, if such a name can be given to a military spectacle which lasted less than six months, and consisted in the occupation of

a wretched little swampy island and the capture of one small town, was one of the most disastrous this country ever was engaged in from the effects of malarial poisoning. 12,000 fell sick in the island of Walcheren and 36,000 within six months after it was evacuated; within 50 days after the landing of the force on the banks of the Scheldt, there were from 7,000 to 10,000 men in hospital with malarial fever; the deaths were from 25 to 80 daily, and it was estimated that had the force remained in Walcheren for 250 days it would have been entirely destroyed. Those who escaped death in Walcheren, returned to England bringing with them the pathological evidences of the terrible nature of the poison to which they had been subjected; intermittent and remittent fevers, diarrhœa, dysentery, dropsy, liver and spleen enlargements.

This was an instance of malarial poisoning in its most virulent form.

I had an opportunity myself of observing the effects of slow malarial poisoning during a residence of four months in Bulgaria with the army under Lord Raglan. The troops were encamped on rough uncultivated ground, often in the vicinity of marshy lakes. There was great heat during the day with cold and dewy nights; fogs and mists prevailed, the food was insufficient and of inferior quality, and before long it was apparent that the strength of this splendid force was being gradually sapped. Many of the strongest became sickly without being able to define what was the matter with them; severe and fatal remittent fever prevailed. In the course of a few weeks regiments which, when they left England, seemed capable of going anywhere and doing anything, had become scarcely capable of accomplishing a march of five miles. The men were pale, weak and anœmic, and, in short, in

the condition to which Vogel gives the term of malaria chlorosis. Men in such a condition fell an easy prey to the epidemic of Asiatic cholera which attacked them, and the force altogether became so enervated by chronic exposure to malarial poisoning, that in 22 days after landing in the Crimea 5,053 were disabled, of whom 353 were killed at the battle of the Alma, 1,867 were wounded, and 2,237 were sent sick to Scutari suffering from one or other of the many forms of malarial poisoning.*

No theory of chill, or sudden alteration of temperature, can account for such wide-spread attacks of illness among a body of men of such splendid physique, and so full apparently of life and vigour, as they were before they landed in Bulgaria.

This condition of malaria—chlorosis or malarial cachexia is observed principally among the inhabitants of notoriously malarial districts, such as the Maremma of Italy, the lower Alps, the great Sunderbund near Calcutta. "A glance at such inhabitants," says Dr. James Johnson, "shows that the range of disorders produced by the poison of malaria is very extensive. The jaundiced complexion, the stunted growth, the stupid countenance, the distended abdomen, and often the dropsical limbs, and shortened life, attest that habitual exposure to this poison saps the energy of every bodily and mental function, and drags its victim to an early grave.

"Fever and ague are as a drop of water in the ocean compared with the other less prominent but more dangerous maladies that silently but effectually disorganise the vital structures under the operation of this deleterious and invisible poison."

Shakespeare seems to have had before his mind's eye

* I am indebted for these facts to my friend Professor Aitken, Army Medical School, Netley.

such a victim, when in the play of the *Tempest* he puts into the mouth of Caliban such an horrible invocation as this:—

> "All the infections that the sun sucks up
> From bogs, fens, flats, on Prosper fall, and make him
> By inch-meal a disease!"

Let us glance for a moment at the effect of the malarial poison upon the blood. It is here perhaps that its influence is felt first, and when this influence is prolonged, its action as a destroyer of red corpuscles is clearly discernible, not only clinically but by actual enumeration.

Cornil and Ranvier thus describe the effects:—"In simple intermittent fever there is after each access a considerable diminution of the number of red corpuscles. Repair then takes place, but it has not time to be accomplished before the return of the next access, and thus the anæmia becomes progressive. As recovery is approached the reverse is the case. The attacks of fever becoming less frequent, time is given for the reconstruction of corpuscles, the blood recovers more than it has lost."

The white corpuscles also diminish in numbers after each access of fever more in proportion than do the red, this is especially so in the condition of malarial cachexia to which I have adverted.

In reference to the question of melanæmia and pigmentation generally it would seem from recent observation that this peculiar alteration or degeneration takes place primarily in the spleen; at all events it is observed most frequently in this organ after it has undergone a series of congestive attacks. The particles of pigment met with in the blood under these conditions are described as being round or angular and of a very black colour; they appear to be taken up by the white corpuscles, and are carried to the different organs.

I may here allude to the experiments of Cuboni and Marchiafava on the blood of malarial patients. They found frequently if not constantly, and in considerable numbers, minute bodies—micro-organisms—of a spherical shape, and invariably placed in the centre of the white corpuscles. At the beginning of an attack of fever bacilli were seen bearing a spore at each end, their length from one to three times the diameter of a red corpuscle. The bacilli increased during an attack of fever, and the spores became more abundant. These observations have been confirmed by Lanze and Peroncilo.

The most recent observations have been reported by Laveran, in 1880, in Algeria and Tunis. He examined the blood of 192 patients suffering from various forms of malarial fever, and in 180 he found cylindrical curved bodies, also spheroids, the size of a corpuscle, containing pigment grains. Besides this the blood contained pigmented red corpuscles and free pigment granules. The addition of a minute quantity of a solution of quinine destroyed these organisms.

The observations of Richard, of Philipsville, seems to point to the presence of a parasite in the blood of malarial patients. He has observed its life history; he considers the red corpuscle to be its special habitat, in which it developes and leaves at maturity. During the paroxysms of fever the corpuscle presents, according to this observer, a round spot, which rapidly enlarges and is encircled by round black granules. Ultimately the hæmoglobin round this substance disappears, leaving a body the size of a corpuscle, containing a collarette of black granulations.

Upon these observations Richard founds the hypothesis that the formidable cerebral symptoms observed in acute malarial poisoning—the vomiting, violent delirium and

subsequent coma, may be produced by the blocking of the cerebral capillaries by these granular pigmentary bodies. If these observations be true, they may account for other clinical symptoms of malarial poisoning, the anœmia arising from enormous destruction of red corpuscles; the persistence of the infection remaining dormant in the system sometimes for a period of twenty years, and breaking out afresh under special exciting causes, a persistence which seems to be approached only by that of the syphilitic virus.

Now it must be confessed that although these observations on the condition of the blood in malarial poisoning have been conducted with great care, there is a certain vagueness and obscurity about them, and their hyperscientific character renders any satisfactory conclusions difficult and conflicting. But I think at all events we may draw from them this inference; that whatever the physical characters of the malarial poison may be, whether it is a bacillus as Crudeli avers, or a germ so minute as to defy the powers of the microscope—there can be very little doubt that its action as a blood disintegrator and destroyer is based upon tolerably clear evidence.

If we believe malarial fevers to result from a special blood infection, the secondary effects of the poison upon the different systems and organs of the body are not difficult to account for. These effects are probably most manifest in the organs engaged especially in the formation of the blood, notably the spleen, liver and lymphatic system, as well as those engaged in the processes of excretion, such as the kidneys, intestinal tract and skin.

The spleen suffers more or less in all fevers. Perhaps we do not pay so much attention to this fact as do our

brethren of the German school. Professor Friedrich, of Heidelberg, maintains that this organ undergoes enlargement in all infectious fevers, in all those concerning the development of which there is fair ground for assuming the existence of a contagium vivum of some sort. At all events in the vast majority of malarial fevers the spleen undergoes important pathological changes, probably the result of concentration within its vascular pulp of poisonous material, which by its irritating properties produces enormous hyperplastic proliferation of this element of the splenic structure.

The malarial poison has, if I may use the expression, a special affinity for the spleen. When the poisonous dose is large and suddenly imbibed, the changes produced in the spleen are extremely rapid. Instances have occurred where persons have died in a few hours from the intensity of the dose of malaria, and in such cases the spleen, liver and intestinal tract have all been found intensely congested, but especially the spleen.

We are all familiar with the effect of chronic malarial poisoning upon the spleen, the chronic enlargement and hardening, and the formation of the well-known ague-cake, with all its disastrous consequences of hæmatemesis, dropsy and lingering death.

The size which the spleen attains in these latter cases is sometimes enormous. In the Pathological Museum of the Army Medical Department there is a spleen taken from the body of a drummer boy, aged 14, who had been only two years in India. When he returned to England his abdomen was so large and tense that he was supposed to be suffering from ascites; he was tapped without any result. He died subsequently, and at the autopsy the spleen was found extending from the false ribs to the

ilium; it weighed 10 lbs. 15 oz.; it measured 14 in. by $7\frac{3}{4}$ in., and it was nearly 5 in. in thickness.

Friedrich states that splenic enlargement may be accounted for on the hypothesis of a substantia viva; that the contagium being carried into the vascular apparatus of the organ accumulates there, and attains a degree of intensity and concentration varying according to the dose of the poison, producing alteration of the pulp and general hypertrophy.

Hertz attempts to explain the action of the poison more minutely; he thinks its influence on the spleen may be accounted for on the supposition that on the one hand it paralyses the motor nerves of the coats of the vessels, thus inducing hyperæmia; on the other hand that it directly injures the blood in the vessels and in the parenchyma of the gland. By the latter means the red corpuscles are disintegrated and transformed into pigment, and the white corpuscles are hindered in their development.

If it be true that the spleen has this faculty of retaining and holding within it the ultimate factors of acute febrile disease, may it not be reasonably entertained that the malarial contagium finds in this organ a special nidus which supports its vitality and stores up its power, keeping it dormant for a time, and again suffering it to burst into life and activity under circumstances favourable to its development; thus accounting for the periodical storms of fever at long intervals occurring in persons who had at some previous part of their lives been subject to the influence of the poison.

Although it may be said that splenic congestion is the special lesion of malarial poisoning, other organs suffer in a greater or lesser degree, specially the liver and intestinal

tract. But it has a much more extensive influence than this. Dr. Norman Chevers considers that many of the gravest diseases of India are largely due to malaria. Cholera, dysentery, suppurative hepatitis, land scurvy, sloughing of the cornea, menorrhagia, a tendency to abort, post partum hæmorrhage, tetanus, rheumatism, bowel complaints, are all, he says, chargeable to the account of malarial poisoning.

Dr. Maclagan in his recent work on Rheumatism discusses his reasons for believing that the malarial poison is largely concerned in producing the disease, and that the poison is an organism whose morbific action is intimately associated with its organic development. Whether the miasmatic theory of rheumatic fever be the true one or not, there is at all events a certain analogy between the features of rheumatic and those of malarial fevers to which Dr. Maclagan draws attention, as for example: The non-elimination of the poison; its persistence and lengthened vitality within the body; the non-contagious character of the fever and the liability of the patient to repeated attacks.

And bearing upon this point I may add that some of the most intractable forms of rheumatism, both articular and muscular, with which I have ever met, have been preceded by malarial intermittent or remittent fever, notably those occurring in Malta and Gibraltar.

Time will not permit me to discuss the sequelæ of malarial poisoning, its effects upon the kidneys and genito-urinary passages, evidenced by such phenomena as intermittent albuminuria and hæmaturia, or its baneful results on the brain and nervous system, and the numerous forms of neuralgia which spring from its influence.

I suppose I am right in the assumption that one of the

most cogent proofs of the existence of a specific poison-germ or contagium vivum, or by whatsoever name you may choose to call it, lies in the clinical fact of a large number of persons being struck down within a given area by a fever presenting similar symptoms in each case. Take for example such an instance as that which occurred at Umritsir, a large and populous city in the Punjab, in 1881. Scarcely an individual in the city escaped an attack, business was almost suspended, nine-tenths of the shops were closed. The death-rate rose to 200 a day. The type of the fever presented all the recognised malarial characters; intermittent and remittent, attended with bilious vomiting and splenic enlargement. The mortality among children was excessively high; out of a total mortality of 6,859 there were 3,531 deaths among children, showing the marked susceptibility of children to the malarial poison.

The health officer of the station attributed the outbreak to a heavy rain-fall, water-logging of the soil and obstructed sewerage; most probably also where the fever was so universal as in this case the drinking water became contaminated with the malarial poison-germ. There seems to have been no idea entertained that the fever was in any way contagious. In its clinical aspects and pathological lesions it was a malarious fever pure and simple.

Finally, have we not another argument in favour of the germ theory of malarial fevers in the fact of their being generally amenable to treatment by quinine? How does quinine act? We know that it is an anti-pyretic and anti-periodic. We give it in large doses in fevers and other diseases attended with hyper-pyrexia; and we do so with confidence. We know almost to a certainty that it will answer our expectations. For if there be such a

thing as a specific remedy, it is surely quinine in the treatment of malarial fevers. But by what power it acts in this way we know not. In the absence of proof to the contrary it is at least justifiable to surmise that it acts by its antiseptic properties, by its destructive agency on the specific germs of fever in the blood.

If we accept the theory of a special malarial poison, it is not unreasonable to assume that quinine exercises its special curative power in rendering this poison inoperative within the body, and its special prophylactic power by rendering the blood unfit for its reception and development.

Briefly then to sum up the proofs of the existence of a special malarial poison germ, short of its actual demonstration, we may thus express them :—

First.—Malarial fevers have a period of incubation followed by fever-storm.

Second.—They have special organic lesions.

Third.—The destructive effects of the poison upon the blood are demonstrable by actual observation.

Fourth.—The evidence of the communicability of the poison through potable water is, to say the least, very strong.

Last.—The influence of antidotes, such as quinine, arsenic, eucalyptus, in counteracting the effects of the poison is clearly manifest.

I cannot however bring the subject to a close without alluding to the efforts which are being made, at least in one notorious locality, to meet and fight the enemy on its own ground.

The Roman Campagna, in long ages past the site of large cities, has been notorious for 2,000 years for its malarious fevers. Who does not think twice even now

about advising a friend or a patient to pass a winter in Rome? The ancient inhabitants of Rome knew the dangers which were close to their walls; a whole system of drainage has been recently discovered in this locality, which has arisen as it were from the grave of a long buried past to rebuke with bitter irony the apathy of the present generation. It seems, however, that at last something in the way of practical effort is about to be made to mitigate the dangers of this notorious plague spot. The late General Garibaldi, unpractical and visionary as he may have been, fervently desired the removal of the evil, and conceived and agitated some wild scheme for the drainage of the Campagna.

The Trappist monks, whose mission in life is prayer and the tilling of the soil, have been at work for some years in the locality. The Italian Government gave them a large tract of ground on condition that they planted 100,000 trees in ten years. They established the farm of the Tre Fontane and began planting the eucalyptus; thousands of these trees are growing now, and their effect upon the subsoil water is remarkable. In addition to this there is a Government scheme, proposed it is said at the instance of Crudeli, for the gradual drainage of the Campagna, which, if carried out, will doubtless produce admirable sanitary results, although the undertaking is a gigantic one.

The prevalence of malarial fevers in England is a matter of past history; an advanced civilization, extensive drainage, a purer water supply, have combined to sweep away a form of fever which in the days of Sydenham was a veritable plague. It lingers still in some spots, notably in the Isle of Sheppey, and there are few practitioners who do not meet with occasional cases.

And now, gentlemen, having thus very imperfectly discussed before you the special subject of this address, allow me in conclusion to make a few general remarks.

The report of our Society, which will presently be read, will tell you of our increasing numbers, of the interest and value of the papers which have been read, and the morbid specimens which have from time to time been demonstrated for our instruction.

I can truly say for myself that I never attended a meeting of this Society without learning something I did not know before. The advances of surgical and medical science are a marvel to the world. When I reflect upon the surgery and the practice of medicine of nearly forty years ago, and see what is done to-day, I feel like one who has awaked from a dream.

I can recall the time when surgeons shrank with a feeling akin to terror from the thought of wounding the peritoneum, and I have lived to see the wonders now accomplished in the special field of abdominal surgery, and in other branches of the art.

I was invited some months ago by the kindness of one of our members to witness an ovariotomy. The ovarian tumour was found to be firmly and extensively adherent to the uterus, from which it was separated with very great difficulty; the uterus itself, torn, and bleeding profusely from many points, was turned out on the abdominal wall, a large number of vessels on its surface were ligatured, and the womb in this condition was returned to its place —and the patient recovered.

I was permitted by the kindness of another friend to witness an operation performed by him for the cure of deformed legs, and I saw him deliberately manufacture five compound factures while the patient was on the

operating table: and no harmful, but good, results followed. To you who are hospital surgeons, and are seeing and doing such things daily, these may not seem extraordinary facts; I, who have ceased to practise surgery for many years, regard them as among the marvels of the time. When I recall the unsatisfactory results which followed the treatment of empyema in former years, and contrast them with those which are obtained from a more rational method by free incision of the pleural cavity under antiseptic precautions, and an improved method of drainage; and beside all this, when I observe the advanced and still advancing steps in practical medicine, especially in the direction of greater accuracy in diagnosis by physical means, by the aid of the thermometer, the ophthalmoscope, the laryngoscope, and the sphygmograph, I am filled with wonder and thankfulness that our noble profession has made such strides. And how have these things been accomplished? By concentrated effort individually and collectively, by mutual help and encouragement, by the intellectual attrition among the members of our profession as a body, which clears away the useless and the effete, and leaves only the pure gold of fact and truth.

The value of societies like ours has been proved over and over again, but I think we may claim for our own that it is purely scientific. I have never heard a subject of medical ethics discussed here; better avoid them. We come here to learn and to teach, and if the oldest and wisest amongst us can unfold treasures from the rich store of their matured experience, there is not one, however experienced he may be, who may not learn something from the lips of our very youngest member. Our Society has passed almost through its first Decade; that

period has not been unfruitful, and we start afresh now with a new interest, with a young and, I venture to think, a vigorous child to support in the Journal which we have undertaken to foster. We have provided our fledgling with the healthiest surroundings, in the shape of a good committee and a most able and indefatigable editor; but it is for you, gentlemen, and, we trust, for our brethren in the West, to supply it with food suitable for its nourishment, so that it may grow into a strong and influential manhood.

We meet here for practical work and study, in order that we may gather from each other's experience that knowledge which will enable us the better to fight the battle which we wage, however feebly, against disease and death; to learn more of the ever-varying morbid processes constantly operating upon the different organs and structures of the human body, and to look as deeply as we can into those mysteries of undiscovered truth, to attempt the solution of which has been the endeavour of our art from remote ages to the present hour.

> Not in the world of light alone,
> Where God has built His blazing throne,
> Nor yet alone on earth below,
> With belted seas that come and go,
> And endless isles of sunlit green,
> Is all thy Maker's glory seen;
> Look in upon thy wondrous frame—
> Eternal wisdom is the same.

A RECORD OF TWENTY-ONE CASES OF PLACENTA PRÆVIA.

BY

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PLACENTA PRÆVIA is a complication of labour which has always, with good reason, been dreaded by the accoucheur. There is no other complication which puts his skill and courage to so severe a test, and, except rupture of the uterus, there is none which is so dangerous. Fortunately it is rare. For this reason, as well as on account of its gravity, every case of placenta prævia is worth recording, and an experience of not more than a dozen cases becomes valuable. As I have met with more than a score since I commenced midwifery practice, and have made careful notes of each at the time of its occurrence, I am induced to present these notes in an abridged form in the accompanying table.

The rarity of placenta prævia is shown by the fact that in these twenty-one cases there was only one in which I was the original attendant: in all the others I was called in as consultant. Now, if I exclude all my consultation cases, I find that I have only met with one case of placenta prævia in a total of 1,437. This is even less than would appear from the statistics which have been given by Müller* as to the frequency of placenta prævia. By adding together the statistics of various in-

* Ludwig Müller *Placenta Prævia*, Stuttgart, 1877.

TWENTY-ONE CASES OF PL

No.	Date.	Name and Residence.	Original Medical Attendant	No of Pregnancy.	Presentation.	Complications.	Opera
1	1851	Mrs. S., Temple Street	Dr. Swayne	21	Partial placenta and head	Prolapse of cord	Rupture replac
2	1853	Mrs. L., Taylor's Ct., Union St.	Mr. Brock	Multi-para	Partial placenta and elbow	Prolapse of cord	Turning
3	1855	Mrs. —, Lewin's Mead	Midwife	Multi-para	Complete placenta	... ...	Turning
4	1857	Mrs. S., Somerset Street	Mr. Green	5	Partial placenta and feet	Prolapse of cord	Rupture
5	1857	Mrs. —, Jacob's Wells	Mr. McDonald ...	Multi-para	Partial placenta and head	... ...	Rupture
6	1858	Mrs. P., Lower Crescent	Mr. Sawer	1	Partial placenta and head	... ...	Rupture forcep
7	1860	Mrs. P., Green Street	Mr. Baretti	7	Partial placenta and head	... ...	Turning
8	1862	Mrs. —, Berkeley Place	Dr. Carter	Multi-para	Partial placenta, head and hand	... ...	Cephalic
9	1863	Mrs. —, Lodge Street	Mr. Baretti	1	Partial placenta and head	Prolapse of cord	Turning
10	1865	Mrs. K., Hotwell Road	Mr. Crichton.. ...	1	Partial placenta and head	... ...	Rupture
11	1867	Mrs. U., Horfield Road	Mr. Greenly	6	Partial placenta and head	... ...	Turning
12	1867	Mrs. J., Leicester Place	Mr. Baretti	3	Complete placenta and head	Adherent placenta	Turning
13	1868	Mrs. —, Broad Street	Mr. Willett	9	Complete placenta	... ...	Turning
14	1872	Mrs. P., Clifton Wood	Mr. Baretti	3	Partial placenta and head	... ...	Turning
15	1874	Mrs. C., 21 Sion Hill	Mr. Baretti	8	Complete placenta & breech	... ...	Bringing
16	1874	Mrs. L., 108 Pembroke Road	Mr. Coe	5	Partial placenta and knee	... ...	Bringing
17	1876	Mrs. N., Beaumont Place	Mr. Willett	9	Partial placenta and head	... ..	Rupture forcep
18	1876	Mrs. B., Cornwallis Grove	Mr. S. H. Swayne	10	Partial placenta and head	Prolapse of cord	Turning cranio
19	1876	Mrs. M., Pill ...	Mr. Butter	3	Partial placenta and head	... ..	Craniot
20	1877	Mrs. F., Pembroke Road	Mr. Coe	Multi-para	Partial placenta and head	... ...	Turning
21	1877	Mrs. B., Long Ashton	Mr. Day...	13	Partial placenta Head, Feet	Twins, adherent placenta	Forceps of 2n down

Operative Treatment.	Result to Mother.	Result to Child.	Remarks.
Rupture of membranes, replacement of cord	Recovered	Recovered	
Turning (by feet) ...	Recovered	Died ...	
Turning (by feet) ...	Recovered	Died ...	
Rupture of membranes	Recovered	Died ...	Placenta expelled spontaneously before the child.
Rupture of membranes	Recovered	Recovered	
Rupture of membranes, forceps	Recovered	Recovered	
Turning (by feet) ...	Recovered	Died ...	
Cephalic version ...	Recovered	Died ...	6½ months' child.
Turning (by feet) ...	Recovered	Died ...	
Rupture of membranes	Recovered	Recovered	8 months' child.
Turning (by feet) ...	Recovered	Died ...	Some pelvic deformity.
Turning (by feet) ...	Recovered	Died ...	Had partial placenta prævia at second labour.
Turning (by feet) ...	Died ...	Died ...	She died during delivery from hæmorrhage and shock.
Turning (by feet) ...	Recovered	Died ...	Some pelvic narrowing.
Bringing down feet ...	Died ...	Recovered	She died 7 days after labour from septicæmia.
Bringing down feet ...	Died ...	Died ...	She lived 2 months after delivery in very weak state, and at last died from pneumonia.
Rupture of membranes, forceps	Died ...	Died ...	She died 8 days after delivery from septicæmia.
Turning (by feet) and craniotomy	Died ...	Died ..	She died of septicæmia 10 days after delivery.
Craniotomy	Died ...	Dead, putrid	She died 36 hours after delivery, apparently from shock.
Turning (by feet) ...	Died ...	Died ...	She lived 5 days after delivery and then died, apparently from embolism.
Forceps 1st child, feet of 2nd child brought down	Died ...	Died ... Died	She died ¼ hour after delivery from shock. The adherent placenta was peeled off.

vestigators he found reports of 813 instances in 876,432 births, or not quite one case in a thousand.

My own statistics also show a fact which had already been established by those of others, viz., that placenta prævia is much more frequent in multiparæ than in primiparæ. I have reported eighteen instances occurring in multiparæ and only three in primiparæ; this exactly corresponds with what has been observed by others, viz., that the proportion of the former to the latter class is six to one. Now I find that in all the cases I have attended of every kind the proportion of multiparæ is about 75 per cent., or as three to one, in comparison with the primiparæ. It has been observed that placenta prævia is most frequent in women who have borne children very rapidly, and in whom pregnancy has shortly followed abortion, both being conditions which favour relaxation of the uterine walls, dilatation of the cavity, and defective development of the decidua.

In the annexed table I have recognised two varieties of placenta prævia, viz., the partial and the complete. In the first, when the os uteri is sufficiently dilated, the finger feels on making an examination a portion of placenta and also the membranes covering the head or other presenting part; in the second nothing but placenta can be felt. I have recorded seventeen cases of the first variety to four of the second; thus showing that the partial placenta prævia is more than four times as frequent as the complete.

Another peculiarity which is shown in my table is the frequency with which abnormal presentations occur in conjunction with placenta prævia. Thus there were two presentations of the feet, one of the breech, one of the knee, one of the arm, and one of the head and hand; in

addition to these there were no less than five cases in which the cord prolapsed. In Müller's statistics, in 1,148 cases there were 272 transverse and 107 breech presentations. The frequency of these anomalies is partly attributable to the large proportion of premature labours, and partly to the width and lax condition of the lower uterine segment and the consequent want of stability in the fœtus.

The *prognosis* as regards the mother is in cases of placenta prævia exceedingly unfavourable. There is a mortality of one mother in four during or shortly after delivery; including deaths from puerperal processes, Müller estimates the total mortality as not less than from thirty-six to forty per cent. My own statistics quite corroborate this conclusion, and show that Müller's estimate is by no means exaggerated if we follow up the history of the patient during the first two months after delivery. The dangers attending placenta prævia may be said to be "proximate" and "remote"; in the first there is the danger of death within a very few hours from hæmorrhage and shock, in the second within several days or weeks from septicæmia. In my own twenty-one cases there were eight maternal deaths; three of these died of shock within thirty-six hours, of these one died before delivery was completed, another a quarter of an hour after delivery, and another thirty-six hours after. Of the five who died at a later period from more remote causes, such as septicæmia, &c., one died at the end of five days from pulmonary embolism, three from septicæmia at the end of seven, eight, and ten days respectively, and one from pneumonia two months after delivery. It might appear to some to be over scrupulous to reckon this last case as a death from placenta prævia: but there is no doubt, I think, that the attack of pneumonia which ended

fatally was indirectly due to that cause, as the woman remained in an exceedingly prostrate condition up to the time of the attack.

From my own figures it appears that the chief cause of death from placenta prævia is not hæmorrhage, but septicæmia; nor is this much to be wondered at. In the first place hæmorrhage predisposes to septicæmia by favouring absorption; in the next place, in these cases, the larger sinuses of the uterus are situated in the uterine neck, and this is a part that even in ordinary labour is liable to be forcibly stretched, bruised, and sometimes lacerated, and all this is still more likely to happen when turning is resorted to before the os is much dilated. Moreover the situation of the neck of the uterus renders it much more likely than the fundus to lie in contact with putrid clots and lochial discharge.

There is one peculiarity in my table that is worthy of notice, because it shows how untrustworthy statistical conclusions are which are derived from a small number of cases. It will be observed that in the first twelve cases all the mothers recovered; so that for sixteen years I went on attending such cases without losing a single patient, until at last I began to think that the danger of placenta prævia must be over-rated. But I was destined before long to be undeceived most completely. In the last nine cases only one mother recovered; but then these happened to be unusually bad cases, and five out of the eight deaths were from septicæmia and its consequences; remote causes of death which are very little under the control of the medical attendants.

The maternal mortality is also said to be twice as great in complete as in partial presentation of the placenta. My figures do not quite bear out this conclusion,

but then this may arise from the limited number of my cases. I have met with four cases of complete presentation, with a maternal mortality of two, or just one-half; and seventeen partial with a maternal mortality of six, or rather more than one third.

As regards the infant, the prognosis is still more unfavourable than it is as regards the mother. According to Müller nearly two out of every three children are born dead, and more than one-half of those born alive die within the first ten days. In my own table only five children lived and seventeen died, two of these being twins; nor is this surprising when we consider *seriatim* the several risks which the child has to run. In all cases of placenta prævia there is more or less separation before birth of the organ which is the source of the intra-uterine life of the fœtus; and a more or less copious draining away of its life-blood. Then the child has often to incur the additional risk of turning, an operation which according to Dr. Churchill involves the loss of more than one child in three. Then, again, mal-presentations very frequently occur in cases of placenta prævia. I have recorded five cases of prolapsed cord; a mal-presentation the most dangerous of all to the children and involving a loss of more than one-half; I have also noted one transverse presentation and four of the inferior extremities. So it appears that according to Müller placenta prævia involves a loss of five children out of six, and according to my table of more than three out of four. I am led by this to the conclusion that there is no complication of labour which is so dangerous to the child.

As to the *treatment* of placenta prævia, it seems to be the almost unanimous opinion of the best obstetric authorities that the more complete the presentation of

the placenta is the more necessity there is for prompt interference. On this account turning by the feet is almost invariably resorted to when there is a complete placental presentation. In my four cases of complete presentation turning was practised in three, but there was no necessity for it in the fourth, because the feet presented. Two mothers were saved and one child. Of the two mothers that died one lived a week and then died from septicæmia; whilst the other was moribund when I first saw her, turning having been half accomplished by the original attendant. In partial placenta prævia, when a very small portion presents, it is often sufficient merely to rupture the membranes and hasten delivery if necessary by the forceps. In this way six of my seventeen cases of partial presentation were treated, the result being that all the mothers recovered except one, who subsequently died from septicæmia, whilst four children were saved. It was necessary to apply the forceps in two of these cases. If, however, a larger portion of placenta presents, and the hæmorrhage is more urgent, more active interference, in the way of turning, becomes necessary. In this way eight of my cases of partial presentation were delivered; of these six mothers recovered and two died (from septicæmia after some days), whilst all the children were lost.

The balance of opinion, in the present day, seems to incline towards prompt interference as soon as a decided hæmorrhage has taken place, and to oppose an expectant plan in such cases, as formerly recommended; even although pregnancy may be some weeks short of the full term. My father had come to very much the same opinion as this, after more than forty years of extensive midwifery practice. It must always be remembered that there is no safety for the mother so long as pregnancy

continues, and that, as Lusk remarks, "the fatality of placenta prævia is due not so much to the impotence of obstetric art as to the losses of blood which occur suddenly in the absence of professional assistance." On this account the induction of premature labour is strongly recommended after the thirty-second week of pregnancy, so soon as the diagnosis of placenta prævia is established, or at least with the occurrence of the first hæmorrhage. The best results have been obtained by Hecker, Hoffman, and Spiegelberg in accordance with this principle. I have had no cases of late years in which I could adopt this plan, but I certainly shall do so on the first opportunity. As Dr. Barnes remarks: "If the pregnancy have advanced beyond the seventh month, it will as a general rule, I think, be wise to proceed to delivery, for the next hæmorrhage may be fatal: we cannot tell the time or extent of its occurrence, and when it occurs, all, perhaps, that we shall have the opportunity of doing, will be to regret that we did not act when we had the chance."

AN EPIDEMIC OF TETANUS.

BY

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I THINK there can be no doubt that tetanus occurs, from time to time, in what may be called an *epidemic* form; and, if this be so, our enquiries regarding this distressing disease may be directed into such channels as shall ultimately result in a more satisfactory knowledge of its etiology, pathology, and treatment.

There has recently been at the Cardiff Infirmary a succession of cases of traumatic tetanus, and such an experience, although perhaps not new, is sufficiently rare to attract one's attention and to be interesting to the profession.

On the evening of May 21st, 1883, a labouring man, age 25, was admitted under the care of my colleague, Dr. Vachell, with acute and severe traumatic tetanus, which had come on suddenly with "lock-jaw" in the afternoon. His injury was a "smash" of two fingers and thumb, sustained on the 16th, and he was treated as an out-patient till his admission. On the morning of the 22nd the injured parts were amputated; the tetanus, continuing, was treated by chloral and bromide of potassium, and the patient died at 5 a.m. on the 23rd.

On May 23rd I had four major amputations—two legs below the knee in the same patient, for a tram-car smash, one leg below the knee for epithelioma of the foot, and one arm below the shoulder, for a railway smash. On

the 24th I performed ovariotomy on a patient who had been an inmate since the 8th. These five operations were on four patients, three of whom subsequently had tetanus, and two of these cases ended fatally.

I will call the case already alluded to as being admitted with tetanus, "Case 1."

Case 2 was a labourer, single, age 18, admitted May 23rd at 5 a.m., with compound fractures of the right forearm and arm and severe crushing of soft parts, caused by both wheels of an engine passing over his arm. Primary amputation was performed below the shoulder-joint. On the 27th he was up and out in the garden for a short time, it being a beautifully fine day. On the 28th he was up but not out. On the 29th he complained of some difficulty in opening his mouth and in swallowing, severe acute tetanus supervened, and he died at 8 a.m. on the morning of the 31st. His morning and evening temperature up to the morning of the 30th, which was 24 hours after the first tetanic symptoms came on, was from 99° F. to 100° F., on the evening of the 30th it went up to 103° F., on the morning of the 31st it was 102° F., and ten minutes after death the thermometer recorded 104°.6 F. in the axilla.

Treatment.—Tinct. cannabis indicæ, ʒ ss. every hour.

Case 3, a labourer, age 40, single, was admitted on the same day as the last patient, suffering from severe compound fracture of both legs, caused by a tram-car going over them. Primary amputation of both legs, below the knee, was performed. He did well until June 3rd, when spasms came on in his lower extremities, and trismus was first noted on the 5th. He died from exhaustion on the 15th, being the thirteenth day of tetanus, the tetanic symptoms having somewhat subsided. His morning and

evening temperature varied from 99° F. to 100° F. until the evening before his death (the 14th), when it was 104° F. On the morning of the 15th the pulse was 144 and the temperature 101° F.

(The other patient operated upon on the 23rd, and who did *not* suffer from tetanus, was treated in the general male ward, and was discharged cured three weeks after amputation).

Case 4 was an ovariotomy (in a patient aged 39) performed in a special large ward outside the Infirmary building, on May 24th; she was convalescent on June 1st, and was removed into the general female ward on June 7th. She complained slightly of her jaw on the 6th, and was moved back to her old quarters on the 11th. This was a sub-acute case, lasting about 22 days, but her life was often in jeopardy, and she was much troubled by profuse bronchitic secretion and cough, which latter was the main existing cause of her spasms. Her temperature remained normal for ten days after the onset of tetanic symptoms; during the next seven days it stood at about 100° F., going up to 103° F. on the 20th of June. After June 24th it became normal, and remained so.

Case 1 was placed in a medical ward and died in less than 36 hours from the commencement of tetanic symptoms. Cases 2 and 3 were both in the accident ward, and were both admitted and operated upon on May 23rd. Case 2 was seized with tetanic symptoms on May 29th, two days after he had been up and out in the garden. He was much alarmed, because he knew that he had lock-jaw, and he was aware of the other patient dying from it. He was removed to a private ward for quiet, but died within 48 hours of the first onset of symptoms. It can scarcely be that *fear* had any influence in inducing

the disease, because he was not frightened until *after* the lock-jaw had shown itself. Had his going out into the open air, with a temperature of 99°—100°, any causative influence? Some may think it was a little rash to let a man go into the open air so soon after an amputation near the shoulder joint. Was it? The weather was beautifully fine, and the man importunate. Some experienced authorities are of opinion that cases of amputation do better in fine warm weather, when dealt with in tents with the air blowing in from all directions. Nevertheless, it is not improbable that a *chill* may have been the immediate exciting cause of his tetanus, and I think the history of this case would lead me to hesitate in future about allowing a patient to go out *quite* so early after an amputation. Case 3 was a man of reserved temperament, and evidently not quite "all there." He gave one the impression, from the time of his admission, of a man who felt that he was doomed to die. The tetanic symptoms commenced on June 3rd. This was a case of sub-acute tetanus, in which one had a fair hope of recovery, but although the patient took plenty of liquid nourishment he died on June 15th, the thirteenth day of the disease, his tetanic symptoms having considerably abated in severity. It seems inexplicable almost why he should have died from exhaustion.

Excluding the first case admitted with tetanus, the onset of the tetanic symptoms dated respectively May 29th, June 3rd and June 6th.

The other casualties admitted into the Infirmary about this time were:—

May 22. M.; stab in side; in hospital two days.

May 22. M., æt. 37; ununited fracture of tibia; operation.

May 22. M., æt. 24; contusion of back.

May 22. M., æt. 48; epithelioma of foot; amputation.

May 25. F., æt. 5; fracture of femur.

May 27. M., æt. 22; rupture of radial artery and suppuration.

May 28. M., æt. 38; fracture of tibia and fibula.

May 29. M., æt. 29; destruction of eye.

May 29. F., æt. 30; fracture of femur.

June 1. M., æt. 50; compound fracture of femur; died in a few hours.

June 2. M., æt. 27; compound fracture of fingers, &c.

June 5. F., æt. 43; removal of fatty tumour in neck.

June 6. M., æt. 16; disease of ankle joint; amputation.

All the operations which I have referred to in this paper were dealt with under strict antiseptic precautions, and ether was the anæsthetic employed.

Tetanus is truly a mysterious disease. Our knowledge of its pathology and etiology is meagre enough, and, therefore, our treatment must be at all times uncertain, and its results in many cases unsatisfactory. Although it has been said to be more common after injuries to the thumb and fingers, it follows all kinds of accidents, trivial and severe; its accession seems to be uninfluenced by the season of the year, and as to the pathological changes, such as "intense congestion of the spinal cord and structureless exudations, especially in the grey matter,"* it is impossible to say how far they are the causes or the results of the disease.

Poland, in Holmes's *System of Surgery*, gives a table of 3,668 operations at Guy's Hospital in seven years, of which 23 were followed by tetanus; out of 594 wounds of all kinds there were 9 cases of tetanus, and out of 398 compound fractures there were also 9 cases.

* C. Macnamara: Quain's *Dictionary*, Art. Tetanus.

Macnamara* says "it seems certain that local circumstances and meteorological conditions greatly influence the occurrence of tetanus. It is seldom absent in the tropics. It is a common remark in Bengal that on sudden changes of temperature cases appear amongst the surgical patients." I scarcely know whether the cases I have mentioned will in any way bear out this statement. This I may say, as to supposed meteorological influences, that on May 22nd, the day before most of these cases were operated upon, the temperature was 71°.8, the previous day's temperature being 60°.6, and that of May 23rd 66°.2. Here was a sudden accession of heat, which I remembered afterwards, but it may be said that it did not occur at or about the time when tetanic symptoms showed themselves. I do not know whether it is so, but it is possible that tetanus may have a period of incubation, as it is said to run a definite course. The *barometer* at or about this period averaged 30°, and as to *direction of wind* it was most varied. There was no rain. I do not think any importance is to be attached to these various points, except, perhaps, the sudden rise of temperature.

The "local circumstances" at our Infirmary are these: the applications for admission are so numerous that a bed is scarcely allowed to get cool before another occupant has possession of it, and whenever the mysterious "epidemic influence" is in the ascendant, erysipelas is not unlikely to make its appearance in the wards and some of our nurses or resident officers suffer from general malaise, sore throat, boils, &c.

There are some points bearing on the *prognosis* of this disease which it is desirable to bear in mind.

1. Acute and severe cases are almost always fatal under any treatment.

* Art. cit.

2. "The more sudden the onset the more surely fatal is the disease. If it occur 22 days after the receipt of injury it is generally recovered from."*

3. The sub-acute cases, under careful general treatment and very careful nursing, may fairly be expected to recover.

4. It is stated that if the patients survive till the twelfth day they, as a rule, recover, and they may usually be pronounced cured in 25 days from the beginning (Macnamara); yet Poland† states that out of 327 cases 43 were fatal after a duration of from 10 to 22 days, 11 after 22 days, and that the longest duration on record of a fatal case was 39 days.

5. Macnamara‡ lays stress upon the temperature as a guide to the danger, or otherwise, of the patient. He says so long as the temperature is under 101° F. there is nothing to fear, if it rises above 101° F. there is imminent danger, and if it is 103° there is cause for the greatest anxiety. (Dr. O'Beirne records 200 cases without any fever at all.)

6. Those cases in which tetanus occurs in wounds already granulating seem to run a milder and more chronic course.

What is the *origin* of tetanus? The symptoms "are undoubtedly referable to an abnormal influence of the nervous centres which control the action of the voluntary muscles."§ True. But what are the conditions, or the causes, or the influences which bring about these symptoms in cases of surgical injury? Billroth‖ places tetanus amongst the "group of diseases which belong to the traumatic and phlogistic states of infection." He "inclines

* Poland, loc. cit. † *Ibid*, loc. cit. ‡ Art. cit.
§ Macnamara, art. cit. ‖ *Surgery*, vol. ii., p. 67, New Syd. Soc.

very much at present to the humoral theory of tetanus as a peculiar poison disease, without, however, being able to furnish proofs thereof." This is a peculiarly attractive theory, and it seems to me that it is in this direction that we might fairly look to physiological investigations to help us to some better knowledge of the nature of this terrible disorder rather than by investigations as to the state of the spinal nervous system after death, to which system all enquiries hitherto, in search of an answer to the question I have put, seem mainly to have been directed. We have the poison of rabies, producing, after an uncertain period of incubation, hydrophobia; we have the more tangible poison, strychnine, producing, in poisonous doses, symptoms somewhat resembling those of tetanus. May there not be also a poison of tetanus which, as Billroth puts it, "*perhaps very rarely and under entirely peculiar circumstances* becomes formed in the wounds and absorbed from thence?"

Dr. Ogston is in favour of the theory that tetanus is really a septic disease. His views are to be found in some able papers on micrococcus poisoning in the *Journal of Anatomy and Physiology*, vol. xvi., pts. iv. and v., and vol. xvii., pt. i. Unfortunately I have not those papers by me for reference.

As to *treatment*. In acute and severe cases, supervening quickly on the injury, the result is usually fatal whatever system of treatment is adopted. The late Dr. Anstie gave it as his opinion that "Curare,* Calabar Bean, and Nicotine, subcutaneously injected, seem the

* *Curare* impairs and destroys the conductivity of the motor nerves. *Tobacco* is a feeble paralyser of the motor nerves, but more decided paralyser of voluntary muscular fibre. *Calabar Bean* has the advantage, over these and other substances, of directly and powerfully diminishing the reflex activity of the cord. (Fraser: *Practitioner*, vol. i., p. 77.)

three really hopeful means of combating tetanus," and whether we adopt the poison theory or not, such treatment seems to be based on the sound principle of modifying and subduing the *effects* of the disease, and so prolonging the life of the patient with the hope that the disease will gradually lose its intensity and so finally pass away. Dr. Eben. Watson, of Glasgow, speaks hopefully of Calabar Bean. He gives a table of 18 cases so treated, with 10 recoveries and 8 deaths.* I am unable to ascertain how far these were acute and severe cases, except as to 6 of his own. Five of these were of this nature and all died, whilst the sixth, which recovered, had been suffering from tetanus for five days previous to admission to hospital and was not acute in its nature. Dr. Watson† has recorded a case of acute traumatic tetanus, with recovery, in which 1,026 grains of the alcoholic extract of Calabar Bean were given in all. He urges the safety of a very full and free administration, if only two conditions be fulfilled, viz.:—(1) careful and intelligent watching in giving it as often and in such a dose as may be required, and (2) supporting the strength well by fluid nourishment and stimulants. It should be commenced with as early as possible in the case, and the dose boldly increased till some decided effect is produced. ("Muscle itself produces, during its contraction, substances which cause it to contract.")‡

As to the use of tobacco, Dr. Anstie says, "there are very many records scattered here and there which tend to prove that tobacco exerts a powerful influence in tetanus; but it is a most dangerous and unmanageable drug in any form except that of the subcutaneous injec-

* *Practitioner*, vol. iii., p. 158. † *Ibid*, vol. iv., p. 208.
‡ Fraser: *Practitioner*, vol. i., p. 83.

tion of nicotine; and I should much like to see this plan extensively tried. It has already produced brilliant results in more than one recorded case."*

In acute tetanus, then, in spite of many failures, the records of success are sufficiently numerous to induce us persistently to persevere in the full and frequent use of one of these remedies. Sub-acute and chronic cases are far more hopeful as to treatment. Here, I think, the indications are, clearly, to try and keep the patient alive from day to day by abundant fluid nourishment, and to induce sufficient sleep by the use of chloral alone or combined with bromide of potassium, and to moderate spasm by the use of these remedies and the occasional resort to chloroform and hypodermic injection of morphia. Further, I know of no disease where careful and trained nursing is more important as an aid to recovery; so many apparently trivial accidents may happen in the progress of the case in which *intelligent trained* nursing may possibly, nay probably, obviate death. Mr. Bryant† lays stress on the fact that "*as long as the slightest evidence of disease exists, a sudden spasm of the glottis may at any time destroy life.*" It is important to bear this in mind. I attribute the recovery of my case of ovariotomy in a large measure to the careful and unremitting attention bestowed upon it by our House-surgeon, Mr. P. Rhys Griffiths, and the two nurses who took charge of her day and night—the one who was in charge during the night being a thoroughly trained and skilful nurse.

In addition to the four cases already referred to in this paper, and subsequent to them, there have been four more in the wards of the Cardiff Infirmary to which I may briefly refer.

* *Practitioner*, vol. iii., p. 120. † *Surgery*, vol. i., p. 242.

A woman, age 30, of drunken habits, was admitted on June 27th, under the care of my colleague, Dr. Vachell. She had sustained an accident to her left arm on May 31st, and decided symptoms of tetanus set in on June 24th, although she stated she felt some slight stiffness of the jaws on June 12th. This was evidently a sub-acute case, setting in some time after the receipt of injury, and a favourable result was prognosticated. She was treated by frequent hypodermic injections of morphia, with constant nourishment, and was discharged cured on July 20th.

A boy, age 14, admitted under my care on July 23rd, with smashed foot. Syme's amputation was performed at once, antiseptically. Tetanic symptoms set in on the morning of the 28th, and he died on the evening of the 29th.

A man, age 63, admitted under Dr. Vachell's care on August 23rd, with compound fracture of the left leg, which was dressed antiseptically. The fracture did well. Tetanic symptoms set in on September 26th and he died on September 28th, at 10 p.m.

A man, age 43, admitted under Dr. Taylor's care, during my temporary absence from home, on September 20th, with compound fracture of the leg. Dr. Taylor performed primary amputation below the knee. Tetanic symptoms set in on the 26th and he died at 9 p.m. on the 28th.

A STUDY OF "MEDICAL POSTURE."

BY

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THE attention which has been given to surgical anatomy and surgical posture is not out of proportion to the scientific necessities of clinical surgery; but physicians have not devoted an equivalent share of study to anatomy and posture as an essential part of their own branch of therapeutic work. Until the publication of Dr. Sibson's splendid monograph, the subject of medical anatomy had never been formulated for systematic enquiry; certainly no proper instruction in it was offered to students of medicine thirty years ago. To regional surgery the utmost homage was paid, and faint was the hope of a candidate surviving the then mild ordeal of the College of Surgeons if he did not know the anatomical labyrinths of hernia, the physical signs of aneurysm, and the exact relations of vessels and nerves in all sorts of passages and cavities. But about the heart and the lungs and the liver—what was known of their size and precise situation in health, and of their subtle deviations in disease? To answer these questions there arose a race of physicians who published graphic tracings of the heart and its chambers as they lie behind the ribs; of the area of the lungs according as they are compressed or emphysematous; and of the position of the liver as it is pushed up or pushed down by intrinsic enlargement or extrinsic

growths. It was a bold course, this diagrammatic help to clinical study; but it was in a high degree successful. The experiment evoked enthusiasm by its simplicity and obvious utility. I may liken it to the illustration of bare historical record by good maps and plans of battles; how vivid the narrative becomes, and how securely fastened in the memory! And so medical anatomy became a new science in the schools, and was gradually incorporated with the old learning.*

Now, *medical posture* is simply this—the application of an outward remedial system to a disturbed visceral anatomy, and to a disturbed visceral physiology. These conditions are not necessarily or universally bound up together. In the abdomen, for instance, the stomach and the colon are physiological miles apart; but their anatomical contiguity is such that the one may swell and touch the other, and a fistulous communication between them is not very uncommon. It is this *local nearness* of parts, irrespective of physiological relationship, which gives point and meaning to the subject of this paper. Embarrassed organs plead for more room to move in, and to do their duty. "More room" is the audible cry they utter when pain, and that distress which is nearly allied to pain, are the urgent signs. Whether the embarrassment be temporary or permanent is the business of medical anatomy to try and find out, and of medical posture to try and relieve. As physicians our province is to see that structures which are harmless neighbours when at peace, shall not hurt each other when there is patho-

* Drs. Fuller and Aitken were among the first physicians to embellish their writings with pictorial medical anatomy. *Geographical History* was the fruit of the teaching of the illustrious Dr. Arnold, developed in later times by those distinguished historians, Mr. E. A. Freeman and the late Mr. Green.

logical war. According as the body lies this way or that, heavy solid glands may be squeezed and displaced, hollow muscles may be hindered in their working, and vessels or ducts may be partially stopped up. A patient's own sensations usually tell some tale of the internal struggle, and may be a guide to the road which our remedial efforts should take. Here, then, is the neutral territory on which the doctor and the nurse may work in harmony, and where the nurse may justify the definition of her art as a "matter of quick observation and finished execution." Abernethy used to say that we heard much of the *tactus eruditus*, but very little of the *visus eruditus*, which should enable us to determine (by an almost unerring instinct) how far the physical surroundings of light, sound, touch, and posture may contribute to the well-being of any sufferer entrusted to our charge.

It is not necessary to be *ill* in order to experience all the benefits of medical posture. The gynecologist knows what a valuable resource he has in "position" when he desires to correct the many versions and perversions of which he is the reputed master. And there are conditions short of illness in which we welcome the aids of posture and rest. Mere fatigue dictates that balance of extensor and flexor muscles which provides the most ease to the tired organs of locomotion. Some people cannot sleep, however weary, unless the whole body be put into a flexile mould (so to speak), in which it may be shown that the contents of the thoracic and abdominal cavities enjoy the greatest freedom of action. We sometimes put our patients to bed not only for the sake of warmth and repose, but that they may have the liberty of finding out for themselves the attitude in which there is the most complete external and internal rest. But I press on *ad medias res*

and draw my illustrations from clinical practice, reminding my readers that I cannot do more than take hold of the fringe of a very large subject. The oracles wisely say that the transition from health to sickness is never abrupt, for "diseased states of the body are but shortcomings of the physiological standard" (Creighton); and again, "pathology is that branch of biology which concerns itself with disturbances of the normal life" (Huxley).

In the year 1865 I was asked to see a middle-aged man, a tradesman, who was said to be in a "fit." He was the patient of a medical neighbour who was out of town. On obeying the call I found the patient (quite unconscious) lying on a sofa, as nearly as possible flat upon his back, with a skin purplish blue, the body convulsed, and a noise of foaming râles in the chest. It was an instinctive act to turn the man gently upon his right side with the face looking downwards. Foamy saliva ran out of his mouth, the breathing became easier and the body warmer, and there was a gradual recovery without further anxiety. Now if I had been questioned on the spot it is doubtful if I could have rendered an exact reason for what was done. The man was very ill; the state of unconsciousness was increasing; the pulmonary embarrassment was becoming greater every moment, and the cyanosed skin showed that much unäerated blood could not get into the veins. "Something must be done" was the natural cry of those around, and the doctor was expected to do it. Nothing could be swallowed; there was no time for the action of enemata; and outward applications seemed to mock the gravity of the case. The man was slowly drowning in a pool of bronchial mucus. In ordinary health he had a slight bronchorrhœa, and the secretion soon gravitated into the smaller air-tubes when the usual

efforts of expectoration were suspended. At this emergency "posture" stepped in as a static force, and brought relief to the oppressed functions when the dynamic powers were for the moment crushed. By the change of *decubitus* one lung was partially restored to use, and the respiratory muscles on one side were enabled to act with more advantage; while the altered position of the head allowed the watery sputa to find a more ready exit by the mouth.

It has been contended by Dr. Radcliffe that during an epileptic fit it is a great mistake to raise the head.* The head is raised on the supposition that the fit is caused by a rush of blood to the head, which is quite a mistake. During the fit the supply of arterial blood to the head is cut off by an arrest of the breathing; and on theoretical grounds, therefore, what ought to be done is to keep the head down rather than to raise it up. Take away the pillows, let the head fall over the edge of the bed; do everything which may help the blood towards the brain, and a succession of fits in an epileptic person may be cut short.†

If a very young child who has acute bronchitis be placed across the arms of a nurse with the face downwards, and kept in this position for hours at a time, it may make all the difference between gradual recovery and gradual asphyxia.

How many nice points there are in cardiac pathology which test the sagacity of the therapeutist. The living heart is a compendious expression of a number of forces,

* *Practitioner*, February, 1883.

† There are suggestions well worth studying in Sir H. Holland's *Medical Notes and Reflections* (what a rich but now little read book!) on the position of the head in certain affections of the brain (see chapter xxiii.). I may add that it would be difficult to formulate any posture of the head for the relief of the many varieties of headache.

vital and mechanical; and to favour the exercise of these forces under the stress of exhausting disease, so that they shall not come into conflict, is seldom an easy task. Take the matter of cardiac dilatation, and hear Dr. Russell, of Carlisle.* "In a debilitated heart only a small part of the contents of the left ventricle is expelled into the aorta; part regurgitates into the auricle, and the remainder is left in the ventricle. When a patient is recumbent it is easy to understand how a seriously weakened ventricle can carry on the circulation under conditions where a minimum of power suffices to pass on a little blood into the aorta, while the same weak effort relieves ventricular distension by regurgitation into a chamber occupying a posterior and therefore somewhat lower plane. Raise the patient, and the mechanical conditions are materially altered; the weight upon the aortic valves is increased, and more power is required to open them; at the same time the column of blood in the auricle falls into the partially-filled ventricle, and the chamber is over-distended; it is too weak to open the aortic cusps, or to lift the blood into the auricle, and death occurs by paralysis from over-distension." No words could portray with greater fidelity a source of danger not less in anæmia than in prolonged febrile affections.

Another indication for studying the posture of the thorax in disease is afforded by the theory lately advanced by Cohnheim, that œdema of the lungs is due to imperfect action of the left ventricle while the right is still functionally active. Obstruction to the pulmonary circulation must be very great under these circumstances, and a local dropsy must follow if the obstruction be sufficiently long and complete. During perfect health

* *Brit. Med. Journal*, December 30th, 1882.

the heart and the lungs dwell in a sort of international comity, each helping the other, each depending on the other, but neither can do the other's work. Both are, however, *very jealous of trespass;* and when that trespass consists of increased bulk pushing beyond its natural boundary and occupying space at the expense of its neighbour, the invasion is resented, belligerent signals are hoisted, and auscultation and percussion reveal what a strife is going on. The struggle for mastery issues in vascular and neurotic disorder, which may be the prelude of serious and incurable disease. Now if we cannot prevent this disease being developed, should we not study how to give *more room* to those organs which are oppressed and fighting against overwhelming odds? Should we not alleviate suffering by doing so? If we fail to execute this obvious mandate, the patient will take the duty out of our hands, and try and discover for himself how to mitigate his distress.

Orthopnœa is commonly called a symptom, but it is really a therapeutic posture. It is a behaviour of the body instinctively adopted for certain ends. So far as the upper part of the body is concerned, orthopnœa is an adjustment of organs for soothing the chronic anguish of pressure on nerves and vessels; for letting the air get more easily to the blood, or the blood more easily to the air; and for lessening the upward stress of abdominal viscera on heart and lungs.* Whenever the pulse and respiration ratio is disturbed, if the pulse be quiet and the respiration high, then the thoracic space must be dimin-

* Looked at as a remedial symptom, orthopnœa has grave disadvantages, as Dr. Fagge has pointed out (Reynolds' *System of Medicine*, vol. iv., p. 670). It prevents sleep, and keeps the lower limbs at right-angles with the trunk, so that œdema of the legs is increased. It fatigues the lumbar muscles and makes the back ache.

ished by a slow malady, such as a solid tissue or a morbid growth, a pleuritic effusion, or an excess of blood in the pulmonary circulation. For any of these chronic conditions posture is a therapeutic agent of the highest value; a modification of orthopnœa it may be, its form being generally the sloping chest and the raised head; but when the pulse is high and the respiration comparatively infrequent, some acute or febrile process must be going on in which postural aids are of little significance. I have manuscript notes of an unpublished lecture by the late Dr. Todd, in which he dwells on the necessity of helping the right heart *by position of the body* when it is embarrassed by whooping cough and asthma, or by other pulmonary difficulties creating a barrier to the easy transit of the blood. The rational therapeutics of cyanosis would include a leaning to the right side when the body is recumbent; and for palpitation of the heart unconnected with organic disease, it has been recommended to lower the head so as to produce a mechanical congestion of the upper half of the body.

The treatment of the three forms of stertor—palatine, pharyngeal, and mucous, has been explained and illustrated by Dr. Bowles.* In a case related, stertor ceased when the patient was placed upon her side, and a gradual improvement followed; stertor returned and death seemed impending when she was placed upon the opposite side; then again there was instant relief when the former position was renewed, and a return to consciousness was coincident with the cessation of the stertor. It is argued that the varieties of stertor are the immediate results of a local mechanical condition, which may always and at

* Dr. Bowles' original paper was published in the 48th volume of the *Medico-Chirurgical Transactions.*

once be changed; and that in the so-called apoplectic state the paralysed side should be always placed downwards, for the lung of the paralysed side becomes loaded with a mucous fluid, which gravitates to the opposite lung whenever the patient is placed with the sound side downwards. In its passage across the trachea the mucus becomes churned into foam by the ingoing air, causing stertor, great dyspnœa, and possibly death. These principles apply to all conditions in which mucus or fluid exists in either or both lungs; and Dr. Bowles shows that by keeping these facts in mind we may relieve many cases of hæmoptysis and capillary bronchitis.*

During the inhalation of any anæsthetic gas or vapour, the head of a patient should be kept on a level with the body, or on a gradually inclined plane; for if the body be doubled forwards by too great a number of pillows under the head, "curves are made in the windpipe." Dr. Eben. Watson has been lately questioning the propriety of inverting patients in apparent death from the inhalation of chloroform and from drowning, and on good physiological grounds; while Dr. Silvester has followed the same line of argument in teaching that in the treatment of the apparently dead the most suitable position is that of lying on the back, the body inclining a little from the feet upwards, the shoulders and head slightly raised and supported on a firm cushion. This position is favourable for the relief of congestion of the heart and the head, and both sides of the chest are free to expand.†

It goes almost without saying that the therapeutics of

* A medicine opportunely administered may do indirect good by making a natural posture comfortable. Thus after the action of ipecacuanha as an emetic (a "good remedy out of fashion," says Dr. Hare) in capillary bronchitis, a patient may lie moderately low in bed and get some sleep.

† *Lancet*, March 10th and May 19th, 1883.

the abdomen is to a large extent a question of posture. I do not, therefore, recapitulate what is familiar to every student, and ordered as a matter of routine by careful practitioners. But there are one or two points which are not so generally recognised. In treating sea-sickness the body should be put on an inclined plane with the head quite low. Keep as much blood in the brain as possible. More effective in other cases is firm pressure over the stomach by coiling the body around a bolster. In treating an assumed ulcer of the stomach it is imperative that the patient be kept in the recumbent posture in order that the stomach walls may be in a state of rest.* Some forms of persistent vomiting are controlled only by keeping the body in a semi-recumbent position; and the same safe and easy remedy helps to cure gastric and duodenal dyspepsia.

When intussusception is suspected as the cause of an obstruction of the bowels, an enema should be administered while the child is put upon its face, and the nates raised.

In many troubles of the pelvic viscera what comfort is afforded by the simple expedient of lifting the foot of a couch five or six inches. A great solace this is to many a weary woman! The involuntary nocturnal micturition of children, which has perhaps defied a well-planned scheme of physiological diet and drugs, may yield at once if the end of the cot be elevated so as to make the feet of the little patient slightly higher than the head.

In sundry kinds of external neuralgia, a consideration of posture may relieve pain by liberating the painful part

* This recommendation was given by Dr. Brinton in his classical book on *Diseases of the Stomach*, so long ago as 1859, but is not always properly attended to.

from being dragged or squeezed. In the treatment of sciatica, the muscles are relaxed, and the body naturally turns on the painless side; and the arm ought to be supported when its weight would cause or increase pain in the cervical or brachial plexus of nerves.

In the use of our thermal Waters, position requires to be sometimes thought of, and we order the *reclining* bath when by reason of age or infirmity the patient must recline during the process of bathing. And speaking of age and infirmity, may there not be too much rest, or too much of the postures which imply a great deal of rest? Wise advice is that given by Cicero in the *De Senectute*, "*Quod est, eo decet uti;*" of which a free translation would be: "As long as you can walk about, do not ride too often in Bath chairs!"

Finally and conversely, we now and then learn from a person's posture what his disease is or may be. This deductive method is not unknown in the more purely medicinal branch of therapeutics: for even an expert like Dr. Buzzard is obliged to confess that he is not always able to diagnose the syphilitic etiology of a given cerebro-spinal lesion, apart from the fact that iodide of potassium has cured or, at least, much relieved it.

The sketch which has been now attempted of the doctrine of medical posture is necessarily very imperfect. Within the allotted space of a periodical it is not possible to present more than a fragment of a large subject; or, to speak more appropriately, more than bare outlines which may be filled in by a more extended observation and a riper experience. The refinements of therapeutic art are not bound by the discoveries of *Materia Medica* or by the manipulations of the pharmaceutist. Amorphous and almost chaotic as some groups of clinical phenomena

appear to be, and seemingly beyond the most far-reaching generalization, yet they may contain an element of static disturbance which can be put right by a shift of position, a new plane, a hard pillow, or even by a fresh adjustment of clothes. No trifle is beneath the attention of the doctor; his drugs and his hygiene may operate sooner and with more completeness when every detail of his work is under his eye, and when with the sagacity of good generalship he esteems nothing as unworthy of his command. Nothing is to be despised which helps us in the battle against weakness and disease, and which keeps in order a little longer that LIFE which Bichat called a "collection of functions designed to resist death."

ABDOMINAL SECTION IN PERFORATING-ULCER OF THE STOMACH.

A SUGGESTION.

BY

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A CASE of perforating-ulcer of the stomach, which terminated fatally in sixteen hours from the beginning of the symptoms, suggested to me the possibility of successfully attempting some surgical interference in similar cases.

The brief history of this particular case is as follows:—I was called at 9.30 p.m. to see a small, wiry, energetic woman, age 27, the parlour-maid to one of my patients. I was told that up to within three hours of my visit she had been perfectly well, in fact she had over and above her ordinary duties walked four or five miles. About six o'clock in the evening she first complained of feeling ill, she was then more or less faint, and had pain in her stomach. When I saw her I expressed the opinion that she was gravely ill and suffering from something abdominal, either a perforation of the stomach from an old ulcer, or some hæmorrhage into the abdominal cavity. I ordered her what I considered suitable treatment, and saw her very early the next morning; she was then much worse, and died in a few hours. When I first saw her she was pale and faint, lying on her right side, with blanched lips, a pulse of 116 of fair power; she had pain at the epigastrium, tenderness more or less over the abdomen; but she chiefly complained of pain above the left

clavicle. She had no vomiting, but there had been slight attempts at retching; subsequently the ordinary symptoms of peritonitis developed themselves.

I was led to think she had either perforation of the stomach or pelvic hæmatocele (she had menstruated a few days previously).

Post-mortem.—On opening the peritoneal cavity I found lying over the front surface of the stomach a considerable quantity (at least a pint) of fluid, evidently stomach-contents, though there was but little solid material; the fluid did not appear to have diffused itself very widely over the general peritoneal cavity; there was evidence of lymph here and there, and on lifting up the left lobe of the liver, which was slightly adherent to the front wall of the stomach, a small hole was discovered in the anterior surface of the latter organ midway between the pylorus and the cardia, and about one inch from the lesser curvature.

These are the facts of the case, and in themselves they present nothing unusual; but it appeared to me, especially by the light of the post-mortem appearances, that if one had had the courage of one's convictions some attempt might have been made to rescue the patient by surgical means.

It was, as was shown by the post-mortem, a perforation of the stomach in a very accessible situation, and the extravasated stomach-contents, which were chiefly fluid, were readily within reach of the cleaning-up process resorted to in most cases of abdominal section, and which my own practical experience in ovariotomy assures me might have been successfully accomplished in this case.

The actual practice of abdominal surgery has made rapid advances during the past few years; and the suggestive papers of Marion Sims and others on gun-shot

wounds of the abdomen and rupture of the bladder, &c., have still further opened the field of possibilities in abdominal injuries and diseases; but, so far as I know, no suggestion has yet been made to treat surgically such a condition as was illustrated by the case I have mentioned.

It is true that Billroth has successfully removed the pylorus and has even suggested the idea of removing simple ulcers of the stomach; a suggestion which is much more daring, and, to my mind, by no means so justifiable as the one which I venture to make.

I know that my suggestion with reference to surgical interference will be discouraged by the fact that the difficulties of exact diagnosis are great; but these difficulties beset us in all abdominal cases in which we are now accustomed to operate. If we once recognize the possibility of surgical interference in perforating-ulcer of the stomach it will stimulate us to increased accuracy of diagnosis, and I do not despair that before long we shall have in these cases, as we already have in many other abdominal disorders, sufficiently rational and sound data to guide us; if, on the other hand, we are content to accept Leube's opinion "that when perforation occurs—that most disastrous event in the course of gastric ulcer—the only treatment in most cases is to induce euthanasia," then we shall probably rest where we are; but my hope and belief is that before long this disorder, which is so commonly fatal, will be robbed of some of its perils by the timely and well-directed efforts of the surgeon.

It occurred to me that in such a case as mine serviceable interference might assume various forms.

1st. Simple abdominal section with cleaning-up of peritoneum, leaving the gastric ulcer to heal of itself, with appropriate feeding by the rectum for a time.

2nd. In addition to the above means, by paring the edges of the ulcer, or by bringing the edges of the ulcer together without paring, inserting the stitches after the manner employed by Billroth in his pyloric resections.

3rd. Stitching the ulcer to the abdominal wall and establishing a gastric fistula.

Of course, I am aware that all perforating-ulcers of the stomach do not occur on the anterior surface of that organ, and therefore that some modification of the plans proposed would have to be adopted in such cases. The tearing through of a large portion of the great omentum, or the bodily lifting up of this structure, so as to inspect and do what might be needful to the posterior wall of the stomach, need not deter the operator, for it has been proved by experience that this may be done without fatal issue.

Another instance (though not one of perforating-ulcer) occurs to me in which I now think abdominal section might have been satisfactorily practised. It was a case of ruptured tubal gestation, which terminated fatally, with hæmorrhage into the pelvis. This case was accurately diagnosed during life by the late Dr. Martyn. It occurred some years ago, before abdominal surgery was as well understood as it is now; I have no doubt similar cases might be and perhaps are now treated by surgical means.

I put forward the suggestion contained in this paper without waiting for an opportunity of carrying out that suggestion, because it is probable that it may be a long time before another similar case will be met with by me, though they will be certain to occur in the practice of others, who may bear in mind my suggestion and possibly act upon it.

RETINOSCOPY.

BY

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WITH the rapid progress of medical knowledge there is necessarily much more demand on the valuable time of all practitioners. A simplification, therefore, of any method of diagnosis is of great importance, and will surely be hailed with satisfaction. All should bear in mind, however, that no sacrifice of scientific accuracy must be for a moment permitted, even though a new method be one which entails less expenditure of time and trouble than the older one. Fortunately, however, we know that, in a large proportion of instances, a simpler is also a more accurate and scientific method.

Every ophthalmic specialist must often have felt the need of a readier and less troublesome mode of estimating the error of refraction in an ametropic eye than that which, until lately, has been almost universally used. More especially is this the case if the patients be children or obtuse adults, whose sensations, and their interpretation thereof, cannot be relied on as data for accurate diagnosis.

The need is felt still more when the case under examination is one of astigmatism, and not of a simply spherical error of refraction; and the number of such

cases among patients of every class, and of all ages, is very much larger than is generally known. It is by no means rare for a person, the subject of astigmatism, to be assured that glasses will not benefit him; while the defect in vision is, in ignorance, attributed to some abnormal condition of the retina, or of another portion of the visual apparatus.

A method of diagnosis which would render the observer quite independent of the patient's own interpretation of his ocular sensations was a necessity, and the object of the following pages is to point out that the difficulty has been surmounted.

With this end in view I wish to bring to the notice of those members of the profession who have not had an opportunity of becoming practically acquainted with it the great value of Retinoscopy as a means of diagnosing and estimating "ocular errors of refraction."

Judging by my own experience of some hundreds of cases at the Royal Westminster Ophthalmic Hospital and elsewhere, I am quite certain that the method is very accurate if a reasonable amount of care be used, while at the same time it entails much less expenditure of time and trouble to both observer and patient.

The simple fact which forms the basis of the method is this:—If a beam of light be thrown into the eye by reflection from a mirror, the image of the illuminated, nearly circular, portion of retina with the surrounding non-illuminated part will be seen by the observer's eye (situated behind the central aperture of the mirror) to move across the pupillary area in a definite direction as the mirror is tilted about its centre; and, further, the movement of the image is in opposite directions in myopic and hypermetropic eyes.

This was known to Bowman twenty years ago, and he is mentioned in Donder's work on the *Anomalies of Refraction* as having employed it as an aid to the diagnosis of regular astigmatism at that date. Not until lately, however, has it been turned to any really practical account. In 1874 M. Cuignet, of Lille, wrote on the subject under the title of "Keratoscopy"; and a pupil of his—Dr. Mengin—introduced its practice to the notice of the profession in Paris in 1878. Dr. Parent, in 1880, published a valuable article giving the result of his investigation of the matter, and in 1881 gave some practical demonstrations of its use at Moorfields. He substituted the term "Retinoscopy" for "Keratoscopy" as being a more correct one, and recommended the use of a concave instead of a plane mirror, which until then seems to have been generally used. The method is now adopted extensively by ophthalmic specialists, and with, I believe, quite as satisfactory results as I also have obtained from it.

The reason of the concave mirror being preferable to the plane one will be at once seen by reference to Figs. 1 and 2. In these, L is the source of light; M_1 and M_2, the mirror in two successive positions; I_1 and I_2, the respective images; E is the eye; and, in Fig. 2, C_1 and C_2 are the respective centres of the curve of the mirror in its two positions. In both cases the fundus of the eye would be illuminated by rays proceeding from the image of the lamp formed by the mirror, but there is this difference in the two cases, viz., with the plane mirror the image is virtual, and is situated as far behind the mirror as the lamp is in front of it, while with the concave mirror the image is real, and situated nearer the eye than the mirror is; consequently, if both mirrors are the same distance from the eye, the illumination will be more bril-

liant in the latter case, and the illuminated area of the fundus will be brighter and more defined from the surrounding shade. Furthermore, it is evident that with the plane mirror the image of the lamp moves in a direction opposite to that towards which the mirror is tilted, while the reverse of this is the case with the concave reflector.

To obtain very accurate results it is usually necessary to paralyse the "accommodation" of the eye by the use of atropine (or preferably homatropine, as being more rapid and certain in its action). This is more especially necessary with children, in whom the power of "accommodation" is so great, and unless atropine has been effectually employed one is much bothered by the varying degree of myopia or hypermetropia present at different moments. Again, in those curious and interesting cases one occasionally sees of curable myopia due to spasm of the ciliary muscle, it would be almost impossible, without the use of atropine, to ascertain that the eye is generally in a hypermetropic condition when at perfect rest, *i.e.*, when no accommodative power is being exercised.

In myopic eyes, whether astigmatic or not, an approximately accurate measure of the error is usually possible without the use of atropine; but in any case of difficulty it is much better that the patient should submit to what is only a temporary inconvenience *(i.e.* the effects of atropine) rather than run the risk of wearing glasses which do not entirely correct the refractive error.

Another advantage of the preliminary use of atropine is that the dilatation of the pupil allows a better illumination of the fundus; and consequently the illuminated area and its crescentic shadowy margin are more clearly seen.

The patient should be seated in a dark room, or at all

events in a dimly-lighted one, with a dark wall or screen for him to look towards. The lamp must be placed behind the vertical plane of his eyes, so that they may not be directly illuminated by it, and it may be just above, or to one side of, his head.

The other apparatus necessary is a concave mirror, with central aperture, of about 12 inches focal length, and a complete set of "trial-lenses."

The observer seats himself about four feet in front of the patient, and tells the latter to look towards a distant object just above his head; and then, by means of the mirror, reflects a beam of light into the eye under observation. If now the mirror be tilted about its centre in various directions—horizontally, vertically, and obliquely—the image of the illuminated area of the fundus with its curved shadowy border will be distinctly seen to move across the pupillary area in a direction *opposite* to that of the tilting of the mirror if the eye be hypermetropic, but in a *similar* direction if the eye be myopic.

To explain this let us refer first to Figs. 2 and 3. In the former we see that the image of the lamp in front of the mirror is the point from which the rays of light will proceed to illuminate the retina, and that this image moves in the same direction as that towards which the mirror is tilted. In Fig. 3, M, I_1, and I_2, have the same significance as in Fig. 2; G is a bi-convex lens of the same focal length as the "combined refractive media" of an emmetropic eye at rest (= 15. m.m.); S is a screen representing the iris; while the curved lines indicated by the letters Hy., Em., and My. respectively, represent diagrammatically the position of the retina in hypermetropia, emmetropia, and myopia. From the geometrical construction of the figure we at once see that

the illuminated area of the retina moves in a direction the reverse of that in which the image of the lamp moves, in all eyes, whether emmetropic or not. How is it then that the observer notices a reverse movement in myopia, as compared with hypermetropia? This is easily explained by reference to Figs. 4, 5, and 6. In all these figures the lettering is the same as in Fig. 3, except that I_1 and I_2 refer, not to the images of the lamp, but to the images formed by rays of light emerging from the illuminated spots of the retina, O_1 and O_2. And it is, of course, the movement of these images that the observer sees.

In Fig. 4, illustrating hypermetropia, the object, O_1 or O_2, is between the lens and its principal focus, which is in the plane of Em.; consequently the image is virtual, and situated behind the eye, and it moves in the same direction as the illuminated area, *i.e.* in the opposite direction to the tilting of the mirror *(vide* Fig. 3).

In emmetropia (Fig. 5) the rays come from the plane of the principal focus of the lens, and after emerging are parallel, therefore a bright reflex, but no clearly defined image, will be seen by the observer; and an indistinct movement may be noticed, which, as in hypermetropia, is in the opposite direction to the tilting of the mirror.

In myopia (Fig. 6) the appearances differ according to the degree of the refractive error. In the figure the limit of distinct distant vision for small objects by the patient's eye is supposed to be less than four feet, *i.e.* the distance between observer and patient. Rays of light emerging from O_1 will converge to a focus at I_1, and similarly an image of O_2 will be formed at I_2. It is evident that in this case the image and accompanying marginal shade move in the opposite direction to the

illuminated area, and therefore in the same direction as the tilting of the mirror *(vide* Fig. 3). Suppose, however, that the myopia is less in degree, so that the image of a spot on the retina would be formed more than four feet from the patient's eye. The observer will be unable to see it clearly unless he interpose a convex lens of sufficient power to bring the rays to a focus between his own "near point" of distinct vision and the patient; or unless he withdraws to a sufficiently great distance from the patient; and then, of course, the movement of the image will be in the same direction as in the higher degrees of myopia just considered. Unless one of these two proceedings be adopted the observer will see nothing but a blurred appearance, much as in emmetropia, and an ill-defined shadowy movement in a direction opposite to that of the tilting of the mirror. It will be as well here to calculate what is the highest degree of myopia which may exist and yet the image of the retinal spot be formed so far away from the patient as to be behind the observer's point of most distinct vision. If we take this as 9 inches, and he be seated 4 feet from the patient, then the furthest point from the optical centre of the patient's eye at which the observer will be able to see the image distinctly will be 4 ft. − 9 in. = $3\frac{1}{4}$ ft. (990 m.m).

Now we know that the focal length of the refractive apparatus of an eye at rest is 15 m.m., therefore from the formula for convex lenses:—

$$\frac{1}{v} - \frac{1}{u} = -\frac{1}{f} \quad \text{we obtain}$$

$$\frac{1}{v} = \frac{1}{990} - \frac{1}{15} = \frac{1-66}{990} = -\frac{65}{990}$$

$$\text{or } v = -\frac{990}{65} = -15.2 \text{ m.m.}$$

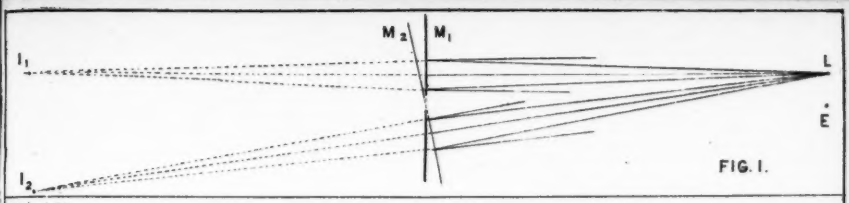


FIG. 1.

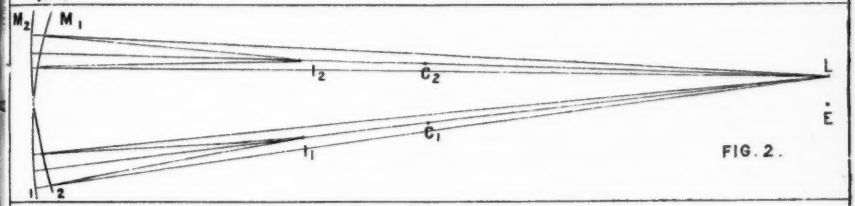


FIG. 2.

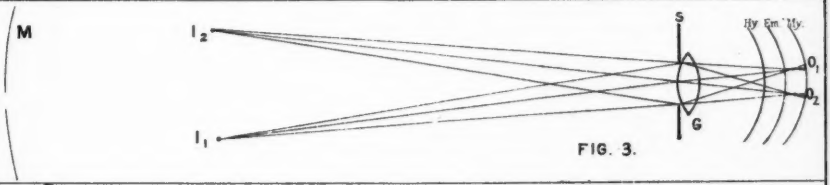


FIG. 3.

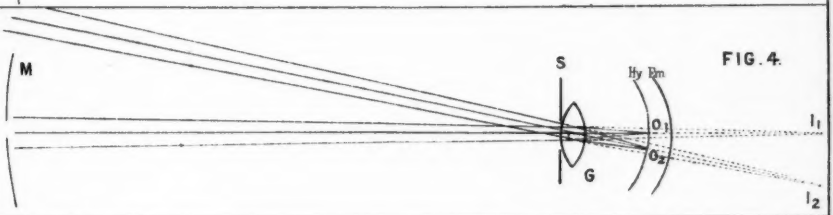


FIG. 4.

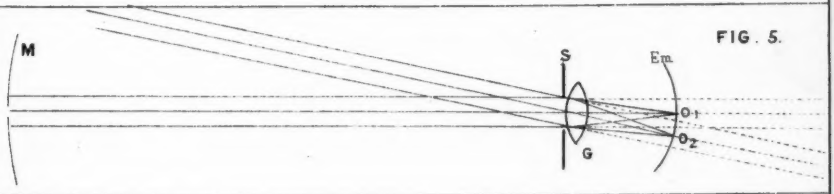


FIG. 5.

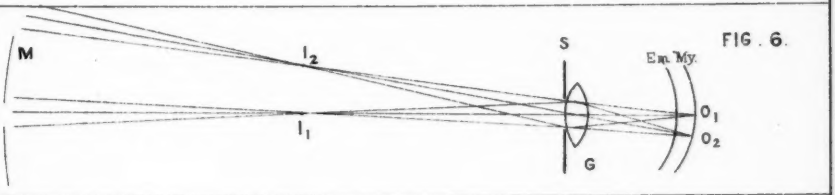


FIG. 6.

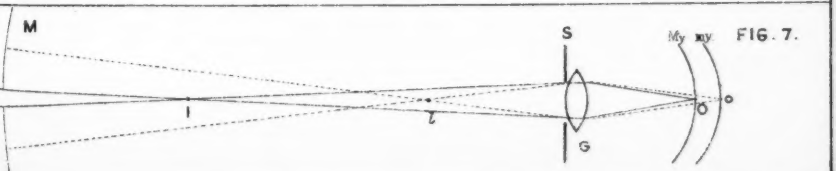


FIG. 7.

This gives the distance of the retina behind the optical centre of an eye, myopic to such a degree as to cause the image of a retinal spot to be formed $3\frac{1}{4}$ feet in front of the eye.

The convex lens, which is strong enough when placed before an emmetropic eye to cause the image of a retinal spot to be formed at a distance of $3\frac{1}{4}$ ft. (990 m.m.), instead of at a practically infinite distance, will be a measure of the degree of myopia we are enquiring for. To put it in other words, the lens which is needed to make the image distinctly visible to the observer, and which therefore will be a measure of the myopia, is the one which will suffice to alter the focal length of the eye from 15 m.m. to 15.2 m.m. In the dioptric system, lenses of these two focal lengths are represented by 66.6 D and 65.7 D respectively, the difference between which is 0.9 D. Therefore a lens of about 1. D strength is necessary. In confirmation of this conclusion, we find by direct experiment that in myopia of 1. D, or less, retinoscopy shows an indistinct image, or blurred appearance, in which the movement is in an opposite direction to the tilting of the mirror, as in emmetropia.

Before proceeding to the remaining details of the practical application of retinoscopy there is one other point to explain, viz., the fact that the higher the degree of refractive error, the more feeble is the illumination of the fundus, and the slower the movement of the image across the pupillary area. As this is the case in both myopia and hypermetropia it will suffice to consider either condition. Let us take the former. In Fig. 7 My. and my. are to represent the relative positions of the retina in cases of low and high myopia respectively. I. and i. are the positions of the corresponding images. We know

that the further from the optical centre of a lens the image is formed the larger will it be, and also the more quickly will any point in it move across the field of vision. Thus we at once see from the figure that the image moves more slowly in high myopia than in low, because it is nearer the optical centre of the eye. It is evident also that the much greater divergence of the rays of light in a case of high, as compared with low, myopia, causes the intensity of the illumination to diminish much more rapidly, as the distance increases, in the one case than in the other. In the figure we see that only a small beam of light passing through the lens near its centre, and through the image i., will fall on the observer's eye behind the aperture of the mirror; while if the myopia be low in degree, rays which pass through even the peripheral portion of the lens will reach the observer's eye, as well as those passing more centrally.

In a case of simple spherical error of refraction we find that the image and shadow are seen equally well in any meridian, according to the direction in which the mirror is tilted. If there be regular astigmatism this is not the case, and we are generally able to tell pretty accurately the direction of the two principal meridians by the manner in which the image moves. In simple astigmatism we find the appearances due to emmetropia in one meridian, and those due to hypermetropia, or myopia, most marked in a meridian at right angles to this. In compound astigmatism there is hypermetropia, or myopia, in both meridians, but we find that there is a distinct difference in the intensity of illumination, and in the rapidity of the movement of the image and shadow in the two directions. In mixed astigmatism there is myopia in one, and hypermetropia in the

other, principal meridian. When the astigmatism is irregular in character retinoscopy is of little value; and we correspondingly find that vision is slightly, if at all, improved by glasses. Such cases are, however, comparatively rare.

When we know the *kind* of error of refraction in any eye, or in any particular meridian of the eye, we still have to estimate its *degree*. This is done by placing successively in a spectacle frame before the patient's eye lenses of different strength, commencing with a weak one, until we find that the appearances due to emmetropia have replaced those due to the kind of ametropia present. If the eye be hypermetropic we try various convex glasses, until we find one which just causes the opposite image and shadow (previously distinct) to become blurred, so that a shadowy illumination only is seen. The strength of this lens is just in excess (about 0.25 D) of the hypermetropia present. The same result will be arrived at if we use a lens which is just sufficient to replace the opposite image by one which moves in a similar direction to the tilting of the mirror, and then subtract 1. D from the strength of this lens. The remainder will be an exact expression of the degree of hypermetropia.

Suppose, now, that the eye under examination be myopic. We must use various concave lenses successively until we find one which is just strong enough to cause the similar image and shadow to become, as in the previous case, blurred and indistinct. By adding 1. D to the strength of this lens, we have a correct measure of the myopia. An alternative plan, which perhaps is preferable, especially in low myopia, is the following:—Find the lens which is just sufficient to cause the similar image

and shadow to become a distinctly opposite one. The strength of this lens is just in excess (about 0.25 D) of the myopia present.

To be still more accurate it is advisable to estimate the error in both ways, and then to take the mean of the two results (if there be a difference) as expressing the degree of error.

When the myopia is below 1. D it may, without care, be mistaken for emmetropia, as the appearance of the image and shadow are alike in the two cases. But in the latter a distinctly opposite movement of image and shadow is produced by a concave lens of 0.25 D strength; whereas in the former a stronger lens than this will be necessary to produce the same result.

If an eye be astigmatic we first estimate the amount of error in one chief meridian by one of the two plans described, and then in the meridian at right angles to this.

Having thus estimated the refractive error, we must confirm our diagnosis by comparing the patient's distant vision with and without the aid of the glasses which are indicated; and while so doing, in astigmatic cases, we should be very careful to adjust accurately the direction of the axis of the cylindrical lens, especially when the astigmatism is high in degree. Finally, when atropine has been used, it is necessary to allow its effects to pass off entirely—which will take about a week—and then again to test the effect of the indicated lenses on the patient's vision for near, as well as distant, standard test-types, before proceeding to order the spectacles.

Such large numbers of people suffer inconvenience, to a greater or less degree, from the presence of unrecognised errors of refraction in one or both eyes, that I feel no

apology is needed for having brought this subject once more to the notice of my professional brethren.

The relief which suitable lenses bring to such patients is so immediate and marked that I look upon this somewhat neglected field of therapeutics as worthy the most careful consideration of all who desire to do their utmost to relieve, or cure, the innumerable ills which flesh is heir to—the comparatively trivial equally with the most grave.

Clinical Records.

CASES OF MUSCULAR ATROPHY AND DEGENERATION.

By J. Fenton Evans, M.B., House Physician, Bristol Royal Infirmary.

The accompanying photographs are of some interesting cases of atrophy and degeneration of muscles which have been in the medical wards of the Bristol Royal Infirmary during the past six months:—

No. 1.—Herbert M. Progressive atrophy of most of the muscles of the trunk, chiefly the abdominal and scapular muscles.

No. 2.—Edwin B. Progressive muscular atrophy, showing the wasting of the erector spinæ and consequent prominence of the spines of the vertebræ.

No. 3.—Edwin B. Fore-arms and hands showing wasting of the flexor and extensor groups of muscles on either side of the elbow, and of the thenar and hypothenar eminences of the palm. As is shown in the photograph, the fingers of the left hand can be straightened to a varying extent, but not those of the right hand, which presents accordingly the "main en griffe."

No. 4.—Edwin B. Fore-arms showing a deep groove between the radius and ulna, due to atrophy of the extensor muscles, also grooves between the metacarpal bones caused by wasting of the dorsal interossei.

No. 5.—Mary D. Both arms, the atrophy limited to muscles of left fore-arm and hand.

No. 6.—Esther H. Pseudo-hypertrophic paralysis, excessive development of lower limbs.

Herbert M., æt. 10 years, under Dr. Shingleton Smith, is said to have always been weakly since a fall at 2½ years of age, his condition getting steadily worse during the last four years, unable to go to school during the last six months. On attempting to walk he frequently falls, bruising himself; can use his arms well. The face entirely lacks expression, the lower jaw and lip hanging so that the mouth is constantly open. The eyelids cannot be completely closed, a chink a quarter of an inch wide being left after the strongest effort. The tongue is protruded evenly. There is no difficulty in mastication, deglutition, defæcation or micturition.

As he stands the abdomen bulges in a remarkable manner, the spine being drawn back and the thorax raised. This is due to the atrophy of the abdominal muscles and unopposed action of the erector spinæ, the viscera protruding owing to the laxity of the abdominal wall. Very little action of the abdominal muscles occurs on stooping.

The muscles connecting the scapulæ to the trunk appear to have suffered most, the rhomboidei and trapezii being almost absent, thereby allowing the scapula to be tilted up and out in a curious wing-like manner from the shoulder. The muscles proper of the scapula are not much affected.

The muscles of the limbs are wasted, more in the upper than the lower extremity, more in the thighs than below the knee; those of the hands and feet escaping the process of atrophy almost entirely, the case presenting in this a marked difference to ordinary progressive muscular

atrophy, as also in the absence of fibrillary twitchings in any of the muscles.

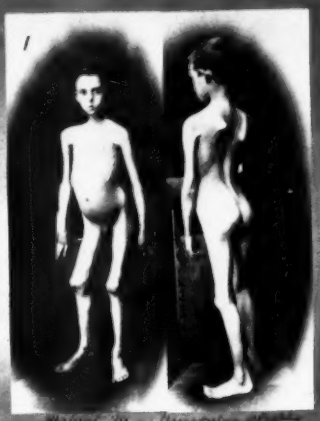
The pectoral muscles are almost absent and do not respond to the Faradic current, by which contractions can be produced to a varying extent in all the other muscles.

Patellar reflex and ankle-clonus both absent. The organs are all normal. Retinæ and discs normal.

Patient was in the house three weeks, during which time he gained strength and 4 lbs. in weight, and is now improving as an out-patient.

The etiology of this case presents some difficulty. There was no want of intelligence, no affection of a cranial nerve, and no error of sensibility. The want of power proceeded *pari passu* with the muscular atrophy, there had never been any febrile symptom or acute attack, so that consequently the case is most akin to progressive muscular atrophy, although unlike it in the points already mentioned.

2. Edwin B., æt. 42 years, cabinet-maker, a patient under Dr. Shingleton Smith, has suffered for the last four years with increasing weakness and muscular atrophy. At first his attention was excited by the fact that he frequently dropped his tools after taking them up, and shortly afterwards was unable to use the "scraper." The fingers soon became flexed and the wrist dropped, together with a wasting of the balls of the thumbs. The wasting of the muscles has increased up to the present time, those of the upper limbs, spine, and face having suffered chiefly. In the hands the thenar and hypothenar eminences are wanting, the dorsal interossei and the muscles of the fore-arm are replaced by deep grooves. On either side of the spine is a deep groove, as also beneath the clavicles, due to atrophy of muscles. Fib-


1

2

3
Arms of Edwin B.

4
arms of Edwin B.

5
Mary D—

6
Esther H—

rillary twitchings are constantly going on. Most of the muscles respond to the Faradic current.

The pupils are pin-point, not acting with accommodation, and nearly insensitive to light. Optic discs: left, slightly indistinct; right, no outline; veins of each retina distended. Posterior staphyloma at upper part of right disc.

Sexual inclination has been absent during last year. Micturition is frequently difficult from want of power in bladder.

The cutaneous reflexes are increased, especially the right cremasteric, abdominal and plantar. No ankle-clonus. Patellar reflex normal.

Patient constantly suffers from crampy pains, almost like those of posterior sclerosis. Nine years ago he had rheumatic fever, when most of his joints were affected.

This case, one of advanced progressive muscular atrophy, is interesting from the presence of the oculo-pupillary phenomena, indicating some affection of the cervical sympathetic in addition to that of the anterior cornua. It affords also a contrast to the case of Sarah M., æt. 40, who was admitted under Dr. Waldo with partial paralysis of the four limbs of one week's duration. This gradually increased for a time after admission, being slowly followed in from two to three months' time by restoration of power, first in the arms, and now slowly in the legs; but this return of motor power was accompanied by atrophy of the muscles, the hands presenting the characteristic "main en griffe," so marked in the case of Edwin B. But the history of the case is one of atrophy occurring subsequent to the paralysis, and with the return of voluntary muscular action instead of *pari passu* with its loss. The absence of fibrillary twitching, and the

inability of the muscles in their present or atrophic condition to respond to the Faradic current, leave no doubt that the case of Sarah M. is one of chronic atrophic spinal paralysis.

5. Mary D., æt. 36, domestic servant, a patient under Dr. Shaw. The atrophy in this case is strictly limited to the left fore-arm and hand. Both the flexor and extensor group is atrophied, but chiefly the flexor. In the hand the thenar and hypothenar eminences and dorsal interossei are much wasted, the fingers slightly flexed upon the palm, the heads of the metacarpal bones prominent anteriorly, the hand presenting the appearance of "main en griffe." Fibrillary twitchings of the affected muscles are constantly occurring, and specially in the first dorsal interosseous. The left hand is $\frac{4}{5}$° colder than the right, the left axilla 1° colder than the right. There is considerable impairment of thermal and tactile sense. The wasted muscles all respond to a Faradic current, but to a less extent than do those of the right fore-arm to a current of equal strength.

This condition has only prevented the patient from working during the last three months, the left hand and fore-arm often giving way of late; but she has been sensible of a growing weakness in the left arm for at least ten years. The wasting of the hand was pointed out to her about three years ago by a friend. No history of injury to the brachial or other nerves, or evidence of neuroma. General health excellent.

6.—Esther H., æt. 17, and Mary H., æt. 16, sisters; patients under Dr. Shaw; both suffering from pseudo-hypertrophic paralysis, the paralysis and hypertrophy affecting the lower extremities chiefly.

Both sisters enjoyed good health until four years ago,

when both had scarlet fever, from which they recovered. Six months subsequent to this, Esther, the elder, began to fail in strength, and noticed that the calves of her legs were becoming larger and hard; three months later Mary H. also became affected in the same way. Family history good, healthy brothers and sisters. Mary H. is wanting in intelligence.

Both sisters are very short, 4 feet 8 inches in height, of strumous appearance, puffy face, teeth pegged and separated. Esther H. is unable to walk or even stand by herself; Mary H. is able to stand and walk a little with the characteristic waddling gait and some amount of talipes equinus, but not able to raise herself from the kneeling posture. As can be seen from the photograph both the buttocks and calves are much hypertrophied, the latter measuring thirteen inches in circumference in each case. Some paralysis and hypertrophy of the deltoids, so that neither patient is able to raise her arm to a level with the shoulder. The affected muscles respond feebly to the interrupted current. Patellar reflex wanting. No ankle-clonus.

An hereditary predisposition to this disease has been frequently observed, although not in direct descent as a rule, since death generally occurs in youth. Children of the same family are sometimes affected, as in the cases given. The rarity of the disease in the United States is interesting; Hammond, in 1876, had only seen two cases, and mentions that only seven others had been reported up to that time.

I am indebted to Dr. Shingleton Smith and Dr. Shaw for the accompanying photograph and for permission to publish these cases.

NOTE ON THE UTILITY OF IODOFORM IN THE TREATMENT OF PHTHISIS, AND ITS OCCASIONAL TOXIC EFFECTS.

By R. Shingleton Smith, M.D. Lond., B.Sc., M.R.C.P., Physician to the Bristol Royal Infirmary.

The earliest observations on Iodoform are those of Righini, who maintains that this substance is superior to other preparations of Iodine in possessing anæsthetic as well as antiseptic and antimiasmatic properties. It does not cause the local irritation and other symptoms which result from other preparations of iodine.

The drug was found in the excretions, also in the blood, in saliva, sweat, milk, tears, mucus of nose, menstrual fluid, urine, bile, fæces, and liq. ammii. Emaciation was never observed. It was given in doses amounting to three grammes daily; after very large doses Maitre observed appearances of iodism.*

Attention was directed to this drug by Semmola at the International Congress at Amsterdam,† and his facts are confirmed by others.‡

"Iodoform acts in phthisis and chronic bronchial catarrh as an anæsthetic, antiseptic, and alterative. Incipient phthisis is often cured. In advanced cases expectoration is lessened, cough and fever are moderated, caseation is arrested, and life is prolonged."

"The dose may be increased to six or eight grains daily."

Dreschfeld claims the following benefits for the drug:—

* *Brit. and For. Med. Chi. Review*, July, 1864, p. 247.

† *Lancet*, Aug. 1882, p. 326. ‡ *London Med. Record*, June 15th, 1883.

1. Increase of weight. 2. Increase of appetite. 3. Diminution of cough and expectoration. 4. Diminution or even total cessation of night sweats. 5. Temperature was often a little lowered.

"No symptoms of iodoform intoxication had ever been seen." *

Anæsthetic or hypnotic effects have been observed by Binz, who says:—"Since a yeast cell, when touched by iodine, decomposes no more sugar, and a colourless blood cell sends out no more processes, a brain cell, under the same influence, suspends its peculiar activity; it no longer receives impressions from without, and ceases to produce impulses for its centrifugal filaments. It sleeps, if the condition produced by iodine be reparable; it dies, if its structure has been organically altered."†

Oberlaender reports case of female patient with gummy tumours, who took forty-two grammes during a period of eighty days. She was then attacked by dizziness, weakness, and diplopia, which lasted two days and a half. Afterwards she began to vomit, and fell into a deep sleep; this drowsiness alternated with excitement, foolish talking, feeling of anxiety, and twitching of face, and for twelve days she was unable to stand alone or walk.

Another patient took five grammes in seven days. Somnolence, uncertain gait, and headache were followed by coma which lasted for five days, and the patient was not free from the symptoms for fourteen days.‡

The following case is a remarkable illustration of both the benefits which may be derived from iodoform even in

* *B. M. J.*, April, 1883, p. 817; 1882, Vol. II., p. 169.

† *Arch. Exp. Path. u. Pharmakologie*, Band VIII., p. 310; Band XIII., p. 159. ‡ *Deutsche Zeitschrift für pr. Medicin*, 1878, No. 37.

acute and advanced cases of phthisis, and also of its hypnotic action :—

Wm. C., æt. 35, used to weigh 12st. 4lbs.; six months ago was 10st. 12lbs.; on June 16th was 9st. 8lbs.; present weight, August 15th, 1883, 8st. 8lbs. with clothing.

A year ago last June had hooping-cough, and has had cough ever since, but never expectorated any blood; has brought up a little thick phlegm, and perspired freely at night. He believed that his mother and father died of consumption brought on by drink.

Patient was much emaciated, temperature 101° evening; breath short; pulse quick, weak and dicrotous. Dullness at both apices, front and back; the right dull all the way down, left dull to middle of scapula. Crepitation on coughing, but no cavernous sounds. Sputum contained numerous tuberculous bacilli. On August 17 was ordered iodoform, gr. ij., in pil. every four hours.

Aug. 21.—Iodoform increased to three grains; weight, 8st. 1lb. without clothing.

Aug. 28.—It was increased to four grains; weight, 8st. 2lbs. without clothing.

Sept. 4.—It was increased to six grains; weight, 8st. 1lb. without clothing.

Sept. 16.—The urine became of very deep red colour on adding nitric acid, and blue on the further addition of starch. Patient had much improved in general condition. Evening temperature 100°; there was no pain, no perspiration, and he had gained strength. This steady improvement continued up to Oct. 2nd, when he complained of increasing weakness, and on the 3rd he vomited several times; he also complained, on Oct. 5th, that he could not see at all distinctly, everything appeared to be in a fog; he was not able to read, and he saw cats and other creatures

running about. He had various delusions and hallucinations, and was so giddy and weak that he was obliged to remain in bed. The eyes were examined, but no abnormality was discovered. The urine contained evidences of iodine, but no albumen. Morning temperature was 98°·0; evening temperature was 99°·2.

As it was presumed that the mental phenomena might be due to the iodoform, which the patient had taken in quantity amounting to thirty grains daily from Sept. 5th, this drug was discontinued on Oct. 6th, and mist. quinæ given three times daily.

On Oct. 7th the sight had improved, and he was more sensible; accordingly on the 10th iodoform was again given in doses of three grains every four hours.

On the 12th he again had hallucinations, he fancied he saw cats, and was incoherent and nonsensical in his conversation; he also again complained of dimness of sight.

On the 16th he still complained of dimness of vision; he could not read the newspaper, although the pupils were not now dilated by atropine or contracted by eserine. The nurse stated that he talked nonsense all the day, and seemed quite strange and changed in character. He had little cough or expectoration, and no pain.

22nd.—He was less weak, and able to sit up all day; slept fairly. There was no delirium or dreaming, but sight still obscured. The iodoform had been discontinued on the 18th, and the urine now contained no trace of iodine. There was copious muco-purulent expectoration, much increased since the discontinuance of the pills.

He was ordered iodoform, gr. iij., twice a day, and ol. morrhuæ, ʒj. ter die.

26th.—He complained of difficulty in walking, his feet

felt sore as if from walking on pebbles. There was no œdema, no ankle-clonus, and knee-reflex was normal. The muscles of legs were painful at night. There was still complaint of dimness of sight and want of sleep.

Nov. 2nd.—In consequence of a continuance of drowsiness, soreness of feet, pains in legs, and dimness of vision the iodoform pill was altogether discontinued.

Patient was then ordered Easton's syrup, ʒj. ter die.

6th.—The feet swelled a little at night; they still felt numbed; patient was still very drowsy, and could not see well. Was neither gaining nor losing in weight, and had no active symptoms.

9th.—The sputum was becoming more abundant, and contained crowds of tuberculous bacilli.

This case affords some illustration of the results which are commonly observed in most cases of phthisis as a result of the administration of iodoform. In a large number of cases where I have watched its effects similar results have occurred: the temperature falls, the general strength improves, the expectoration diminishes or ceases entirely, the mischief which was before actively progressive in the lung becomes stationary or retrogressive, the weight of the patient steadily increases, and the bacilli become much less numerous or may even disappear altogether from the expectoration.

When such benefits as these are being derived one is naturally inclined to increase the dose of the drug until some physiological toxic results are manifested, and the case further illustrates the physiological limit beyond which it is not safe to go. This limit probably varies much in individual cases: I have observed indications of iodism in some subjects with one-grain doses of iodoform three times daily, in others there has been a complaint of

nausea with a similar dose, but there are very few patients (and one need not exclude children) who cannot take the drug in the ordinary pill form or in the "McK. and R." gelatin capsuled pill. In no case have I given more than six-grain doses five times daily, but I have frequently given five-grain doses and without any deleterious result. It will be observed that toxic symptoms did not manifest themselves until nearly two months after the patient commenced the drug, and not till he had steadily continued with the full dose of six grains five times every twenty-four hours for one month. It will further be seen that the symptoms commenced to abate immediately on the discontinuance of the drug, and were renewed as the drug was again resumed in one-half the previous dose; they then continued as long as the drug was given, and diminished when it was given up. The persistence of the symptoms is remarkable: the iodoform was finally withheld on November 2nd, but the patient's mental condition and his sight are not yet (November 22nd) restored to their normal condition.

The weekly list of weight and average temperature is as follows:—

Aug.	21.	Weight	113	pounds.	Average	temp.	99°·2
"	28.	"	114	"	"	"	99°·6
Sept.	4.	"	113	"	"	"	99°·3
"	11.	"	112	"	"	"	98°·6
"	19.	"	113	"	"	"	98°·8
"	25.	"	113	"	"	"	99°
Oct.	3.	"	110	"	"	"	99°
"	10.	"	109	"	"	"	98°·6
"	17.	"	112	"	"	"	99°·2
"	24.	"	115	"	"	"	99°
"	31.	"	115	"	"	"	99°
Nov.	7.	"	115	"	"	"	98°·8

A CASE OF PRIAPISM. By A. H. Boys, L.R.C.P.

W. S., æt. 65, gardener, came to see me on the 12th May, 1883, complaining of an erection of the penis which had already lasted a week.

The history was that while riding a horse it ran away with him, and the unusual exertion had rubbed the skin off the nates, there was also considerable bruising of the gluteal region generally. The next morning he had an erection (a rarity with him) which had lasted ever since. He had had sexual intercourse in the hopes it would disappear, but that seemed to make it worse; he also suffered a good deal of pain. On examination I found the whole penis swollen, red and œdematous, and it looked at first sight as if he had a paraphimosis; this was in consequence of the foreskin (which was naturally retracted) at the base of the glans being so puffy and œdematous.

I at first ordered a cold lead lotion to be constantly applied, and gave him a mixture containing ten grains of bromide of potassium every three hours. In five days there was no improvement. I then pricked the penis all over with a fine needle; serum flowed abundantly, so I ordered hot bathing, poultices, &c., hoping to encourage the flow of serum, and so reduce the tension on the whole organ.

There was nothing to account for this erection apparently beyond the slight injury to the nates before mentioned. His bowels were thoroughly cleared out by aperients of calomel and jalap; there was no swelling to be felt per rectum, or by palpation anywhere in the pelvis.

The man is temperate; rather prematurely aged. He had a slight attack of bronchitis, also slight hemiplegia about six months before, but there are no signs of paralysis now, and with the exception of the persistent erection of the penis, together with the pain in that organ, and consequent irritability of temper, he is quite well.

The hot treatment failing to produce relief, I again applied cold, in the shape of ice, to the penis and scrotum, a mustard plaister to the spine, giving him internally ten minims of tincture of belladonna every three hours. On the 22nd May, ten days after he came to me, Dr. Shingleton Smith saw him with me. He suggested belladonna suppositories, each containing half a grain of that drug. One was ordered to be inserted every four hours. I visited him on the 24th, when he assured me he could not use the suppositories as they caused so much pain, but on more minute enquiry I discovered to my horror he had been vainly struggling to push a large suppository down his penis!

From this date, however, they were used properly and persistently, in conjunction with a pill containing two grains of iodoform and a grain and a half of extract of conium. In about three days there was a decided improvement, the penis gradually recovered its normal condition, till at the end of three weeks there was no trace of its recent turbulence.

MINUTE HÆMORRHAGES IN THE PIA MATER.

By T. STEELE SHELDON, M.B. Lond., Assistant Medical Superintendent, Somerset and Bath Asylum.

AMELIA C., aged 29, was admitted into the Somerset and Bath Asylum in January, 1881. Two years previously

she is said to have had a "severe attack of intermittent ague and fever, and has had pain in the head ever since." She was suffering from melancholia, was very suicidal, and frequently refused food. In December, 1881, she contracted enteric fever, and intercurrent pneumonia proved fatal on January 26th, 1883. During the illness she was for the most part acutely conscious, rational and coherent. On January 25th the temperature fell suddenly to 97°; in the evening it rose to 102°. On the 26th she was very restless, constantly made sweeping movements of the arms above her head, cried out at intervals, and was delirious. She died in the evening.

Autopsy.—The brain weighed 47½ oz. The Pacchionian bodies were largely developed. The convolutions were intricate but somewhat atrophied, the sulci being wide and marked out under the arachnoid by excess of fluid. There was a remarkable difference in the surface appearance of the hemispheres; on the left side the pia-arachnoid was thin, transparent, and marked only by injected meandering vessels; on the right side the membrane over the superior and middle frontal convolutions, the upper half of the ascending frontal and parietal gyri, and part of the lower parietal lobule, was opaque, soft, reddish, and thickened. On removing it the grey matter below was soft, highly congested, and on the slightest provocation came away with the pia mater. The affected membrane was, moreover, marked by numerous conspicuous bright-red dots, about the size of the head of a small pin, or less. Microscopic examination proved them to be spherical masses of red blood-corpuscles, abutting, like bosses, against the wall of the vessels; they were frequently arranged in pairs, the extravasation having occurred at opposite points in the same section of a

vessel. There was no other noteworthy appearance in the brain.

Remarks.—The above-described morbid appearances would seem to be rare, judging from the little I can find bearing on the subject in the pathological works I have at my disposal. Cornil and Ranvier give a description of the pia mater in cerebral rheumatism and other forms of cerebral congestion accompanied by delirium, among them, typhoid fever.* This description, corresponding in the main with the account given above, is the only reference I have been able to find. It is curious that the lesion was only on one side of the brain; on the affected side it was also limited, that area of the pia-arachnoid being involved which is so constantly the seat of chronic thickening and opacity; speaking roughly, the motor area and the frontal lobe.

TWO CASES—ONE OF GOUTY INFLAMMATION OF THE TESTIS, AND ANOTHER THE TESTICLE OF MUMPS.

By F. K. Green, F.R.C.S., Surgeon Bath Mineral Water Hospital, and Senior Assistant Surgeon Royal United Hospital.

The two cases here given were of interest to me, occurring as they did about the same time and bearing directly upon the question of metastasis.

Case of Gouty Inflammation of the Testis.

E. G., æt. 52, married, was a cachectic, broken-down hotel porter. When I was requested to see him I was told that he was suffering from orchitis, the result of

* *Pathological Histology*, p. 578 (Eng. Trans.)

injury, and that there was probably a hæmatocele. To begin with I was thrown off my guard.

A little inquiry convinced me that the supposed injury was in reality not the cause of his trouble, and examination showed that no hæmatocele existed. I suspected gonorrhœa, which (the patient being married) was, of course, denied. I found acute epididymitis, also inflammation of the gland proper; slight effusion into the tunica vaginalis (which with transmitted light I judged to be turbid), as well as into the posterior part of scrotum; some thickening of the vas and effusion into the cord; exquisite tenderness.

I ordered a saline, with tartar emetic, hot fomentations and bed.

On the sixth day of treatment no improvement had resulted. On the evening of that day he had a sharp attack of orthopnœa, with severe pain in right mammary region, the initial symptoms of a pneumonia which pursued a mild course. On the twelfth day occurred an effusion into both knee-joints, and at the same time there was a slight diminution in the pain in the testicle.

With such symptoms I inquired further into the patient's history, and found that he had suffered from numerous attacks of gouty arthritis. I now inclined to the opinion that the orchitis was gouty, and the further progress of the case confirmed this opinion. Iodide of potassium and colchicum were ordered.

At the end of a further four days but little progress had been made in the testicle and knee-joints, although the pneumonic symptoms were subsiding; but at this date he had a nocturnal seizure of gout in the right foot, which, in the morning, from the ball of the great toe to the ankle was swollen and of a dusky-red colour, and

great was my pleasure to find that the pain in the testicle was entirely gone and the swelling considerably diminished. The rapid recovery of the testicle dated from this period, as also that of the arthritic effusions. Not so, however, the gout in the foot. Several weeks elapsed before the patient could leave his bed, and many more before he could put on his boot.

After the acute symptoms had subsided I made several examinations of his urine and found a low sp. gr. of 1010, and although it contained no albumen, yet the presence here and there of a faintly granular cast revealed the true state of his kidneys.

Case 2.—The Testicle of Mumps.

J. H., æt. 35, a married man, healthy and well-built, was seized in the night with violent delirium, which had somewhat subsided when I saw him on the following morning, although great restlessness was still present. I found well-marked pyrexia; T., 104°·6; pulse, 132; slight commencing perspiration; scanty high-coloured urine. Examination revealed no chest symptoms, no sign of any of the exanthemata, but I accidentally found the left testicle greatly enlarged, hard, and excessively tender. The epididymis shared in this condition, although the gland-swelling greatly preponderated. The shape of the organ was more globular than is invariably seen in gonorrhœal epididymitis, in which, as a rule, there is some flattening from side to side; neither was there the marked prominence of the globus minor, so characteristic of the latter affection. There was slight effusion into the cord, but the vas was not perceptibly thickened.

From the patient in the condition he was in I could of course gain no history of urethral discharge, and I was

loth to question the wife on such a matter; but on asking if he had looked ill for some days past I elicited that fourteen or sixteen days before he had had a great swelling behind each angle of the jaw, which in a few days had completely subsided, and on now examining the parotid regions I could detect no tangible swelling or harshness.

The connection of the orchitis with mumps seemed fairly made out. Acetate of ammonia and antimony were prescribed, together with hot fomentations to the testicle. During the following night there was again delirium, but in the morning his temperature had fallen, and on the fifth day he was convalescent, although very weak. The pain and swelling of the testis rapidly subsided.

Remarks.—The foregoing cases suggest two questions: First, Have the gouty testicle and the testicle of mumps any characters by which they may he distinguished from the common affection gonorrhœal epididymitis? In the case of gout I could detect no appearance in the testicle which is not present in the gonorrhœal affection. The stress of inflammation was in the epididymis. Its slowness to yield to antimonial salines might perhaps have suggested its non-venereal origin; on the other hand, gonorrhœal epididymitis is sometimes very slow in resolution. A history of urethral discharge helps us not at all, for that may be a distinctly, although rare, gouty affection. Indeed, there are some who believe that the gouty testicle, like the gonorrhœal, is always preceded by urethritis. I fear that nothing but a clear history of gout can avail us in diagnosis.

In the case of mumps the globular appearance of the swelling was noticeable, so different from the flattening from side to side seen in gonorrhœa. Again, the stress of

inflammation was in the testicle, or gland proper, while the epididymis was in a minor degree enlarged, the reverse of what obtains in the venereal affection.

The second question suggested by these cases is the vexed one of metastasis. What is metastasis? Can any one answer?

"Modern pathology, whilst admitting the existence of the phenomena to which the term metastasis has been applied, refuses to accept as satisfactory the explanation of the fact implied in the term."*

This is all I can gather of metastasis in the most recent *Dictionary of Medicine*.

The long-prevalent opinion that orchitis is usually a sympathetic inflammation has given place recently to the theory of extension of inflammation along the vas deferens from the urethra to the testicle; and doubtless this is true of gonorrhœal epididymitis, and possibly may also happen in gout when urethritis, a symptom not altogether rare in gout, exists. But gouty orchitis may exist without any urethritis, and I am not aware that urethral symptoms are recognised as part of the disease called mumps. Yet there are some advocates of this theory, Kocher in particular, who believe that urethritis always exists. Kocher believes that the parotitis of mumps is always preceded by stomatitis, which is propagated through Steno's duct to the salivary gland, and that the poison of mumps in its elimination by the kidneys sets up a cystitis or urethritis, which subsequently travelling through the vas reaches at last the testicle. This is ingenious in theory, but I do not think it is borne out in practice. The advocates of this theory ignore metastasis to the testicle in gout and mumps. I would ask, how do they account for inflamma-

* Quain's *Dictionary of Medicine*.

tion of the mamma in mumps? or how account for the sudden resolution of a gouty testis, occurring simultaneously with an explosion of gout in the foot, as happened in the case before us?

Metastasis may be difficult in the present state of our knowledge to explain, although it has a certain covert meaning, but it is a convenient term, and until a better explanation is given of the cause of gout and mumps attacking the testicle, it would be well, I think, to continue to adhere to it.

SUCCESSFUL TERMINATION OF A LARGE ANEURISM, WITHOUT SURGICAL INTERFERENCE.

By HENRY WALDO, M.D., Physician to the Bristol Royal Infirmary.

CHARLES LOWMAN, a farm labourer, aged 40, admitted into Ward V. Bristol Royal Infirmary on 30th April, 1881. Eighteen months before admission, without any known cause—as he is not aware of having strained himself in any way, though constantly in the habit of lifting heavy weights into his cart,—the patient first felt pain in his left arm and hand, the fingers were numb and tingling. The pain, which was rheumatic in character, soon extended to the left shoulder and clavicle. This pain was much increased on making any exertion, and he was compelled to give up work. No previous diseases.

Upon admission there was an elongated pulsating swelling, which filled up the hollow between the left shoulder and the chest, its long axis lying parallel to the arm. In the neck it occupied the space between the anterior border of the trapezius and the sternal head of

the sterno-mastoid, rising as high as the cricoid. Towards the front of the neck the tumour became deeper. It lay under the clavicle, which it raised a little. It extended down, and projected as a rounded pulsating swelling in the axilla. Its breadth was about three inches. There was fluctuation between its upper and lower limit, and there were some enlarged veins over it. There was a systolic murmur to be heard at the upper part of the tumour. The left chest was resonant up to edge of aneurism. Breath sounds feeble over posterior surface of chest, but equal. No spinal pain or tenderness. No dysphagia. Radial pulses equal. Respiration quiet. Pupils equal. Abdomen normal. Urine normal.

This was, no doubt, an aneurism of the left subclavian artery, with the upper part of the sac little thicker than a piece of blotting paper. I asked the surgeons to have a consultation upon the case, and they recommended that the man should be kept under chloroform while relays of students applied digital pressure on the proximal side of the aneurism.

The patient declined to have this done, and so the former treatment was continued. This consisted of perfect rest in bed. The left arm was "put up" as if a fractured clavicle existed. Low diet was ordered, and a restricted allowance of fluids.

Iodide of potassium was given in ten-grain doses three times a day, and this was gradually increased till at the end of seven weeks he was taking fifty grains three times a day. The improvement was very gradual. First, the pain lessened, and then disappeared. The part of the aneurismal sac that could be felt got thicker, and the tumour seemed to shrink. Three months after admission the patient told me that earlier in the day he felt "lost,"

and did not know where he was for one hour, and that the left leg, from the foot to the knee, seemed dead and tingled. After this attack I was unable to detect any pulsation in the aneurism, which felt quite solid, and there was no pulsation to be felt in the brachial, or radial, or any other artery in the left arm. The man left the Infirmary, 29th August, 1881, after a stay of four months. He has been doing his usual work ever since. I exhibited him to the Bath and Bristol Branch of the British Medical Association one year after his discharge, quite well.

UNIVERSITY COLLEGE, BRISTOL.

MEDICAL SCHOOL.

THE Annual Distribution of Prizes took place on July 23rd, 1883, in the Theatre of the Bristol Museum and Library. In their Report the Faculty of the School stated that they had much pleasure in again drawing attention to the satisfactory condition of the School as regards both the number of their students and the excellent character of the work done during the year. The number of entirely new students had been 38, as against 27 in the previous year, and the total number of students on the books during the year was 90.

Dr. BEDDOE, F.R.S., who distributed the prizes, gave the following address:—

Is it possible to be original on an occasion such as the present? Scarcely possible, I think, in the sense of saying what is suitable as well as new, of saying what has never been said before on some similar occasion. Medical schools are many, and in all of them, year by year, come round the introductory lecture and the prize-day address. Fortunately the audience is always, to some extent at least, a new one. "The theory may be gray, but green is the golden tree of life." The prospect of the garden of science is ever new to those who are but just entering the gate, and among the new things to be contemplated is the history of the science and art of medicine. I am not going to ask your attention to the

authenticated beginnings of this history in classic days, when gigantic forms such as those of Hippocrates and Aristotle moved through chaos and darkness, with little more of a fixed point to start from than Archimedes had for his lever. They were giants indeed; they threw penetrating glances to a great distance through that darkness, and fashioned out of the chaos forms that endure and have their value even in our days. But what I wish to consider is not so much the origin and progress, the flux and reflux (for it has not always been real progress), of medical knowledge and skill, as the history and development of the profession. Coleridge said there had been three silent revolutions—the first when the professions fell off from the Church; the second when literature fell off from the professions; and the third when the press fell off from literature. All these would be said, in the present day, to have occurred in the course of evolution by differentiation. The implication, however, that the votaries of science were in the dark ages all embraced within the limits of the clerical body, requires some qualification. Doubtless it is true that down almost to the days of Erasmus there was hardly room, outside the Church or the cloister, for any student not richly gifted with rank and wealth or personal prowess; and that, whether he sought the knowledge of law, or physic, or metaphysic, of man's relations to his fellow-man, or to nature, or to the supernatural. So in the days when bishops were jurists, men like the first great Bacon were monks and friars. But our profession owns a double or a triple ancestry; it is not only differentiation that has been at work in it during the last few centuries; there has also been a process of redintegration, of composition from diverse elements. The Anglo-Saxon—I beg Mr. Free-

man's pardon—the English leech was not always a cleric; the physician of the Mediterranean lands was usually a Jew, or a wandering Greek, or even a Moslem. He may have been the lineal descendant of those precariously-existing vagabonds who are shadowed forth in old semi-mythical stories as existing among the Celts and their neighbours, notably among the Irish, where we hear of a royal invalid ornamenting the circuit of his palace with the severed heads, impaled on the national pike, of unsuccessful practitioners of medicine. The Jews inherited the secrets of their own tribe, and acquired in travel and commerce the knowledge of the Arabian and Persian mediciners. The frequent accusations of poisoning which were brought against them derived, doubtless, a colour from their knowledge of the use of drugs. But it was during the renaissance of learning that the separation of the profession from the Church, which Coleridge speaks of, became distinct and strongly marked. The physician—the physicist, as we now, with a barbarous cacophony, style him,—the student, the worshipper, the interrogator, the interpreter of Nature, was now comparatively seldom a monk, and still seldomer a priest. Still it was not until the Reformation that the final separation took place; and it is noteworthy that when the College of Physicians was constituted, two of its founders, and those the most eminent, viz., Chambre and Linacre, were in Holy Orders, the former having received ordination at an early age, the latter after having acquired reputation in medicine. On the other hand, Sir William Butts, physician to Henry the Eighth, and one of the earliest admitted Fellows of the College, appears in effigy on his tomb clad in the full armour of a knight. Dr. Master, the celebrated physician of Queen Elizabeth, to whom

she gave the beautiful manor and house of Knole, near this city, was in Orders; but his appears to have been a case of simple change of profession, such as might occur in our own day. All these were doctors of medicine, of some British or foreign University, not of necessity, but in compliance with a custom, which has continued almost universal among British physicians up to the present time. Hence it is that in England this word doctor, indicating properly, as you are aware, the possession of a University degree, it may be in theology, in laws, in medicine, in philosophy, or even in music, is customarily but erroneously used to denote a medical practitioner; while the good old Saxon word "leech," once so convenient for that purpose, is enjoyed by a certain little animal less familiar indeed to the present than to the past generation, but supposed to be potent in healing.

The profession of the medical physician, we have seen, was regularly and separately constituted more than three centuries ago, and has undergone since then little formal change. But the ranks of the artists in healing were to be recruited from two other sources, the surgeons and the apothecaries; the former originally regarded as artizans, the latter as traders. The small repute in which surgery used to be held, not only in Europe but in other half-civilised countries, is very remarkable and not altogether easy of explanation. In our own day, undoubtedly, the brilliant triumphs of surgery appeal much more forcibly to the uneducated critic, if not to the educated one, than the more obscure and doubtful victories of medicine. Perhaps in old times the mysteriousness of medicine imposed more upon the imagination; at all events, it was practised by men intellectually and socially superior to the rough, ignorant fellows to whom surgery was abandoned. The

best thing about them was their good old Greek name, χειρουργός—the hand-worker, the handy-man, the proper man of his hands. But to the German the surgeon was a Wundarzt, an artist or artisan who had to do with wounds: and, nowadays, these same Germans use the word Arzt (artist) pretty much as the commonalty among us use that of doctor—regarding the healing art, apparently, as the highest and most useful of arts, the art *par excellence*; whereas we have labelled it as a science taught and put to practical use. There was indeed something to be said in favour of this separation of the two great branches of the healing art; a separation not peculiar to this stage of western civilization, but equally consonant with Oriental ideas. The Ambastha, or physician caste, has always been highly honoured in India, but positively forbidden to practise certain surgical operations, which are left to low-caste men. In more modern times many great intellects have been devoted to surgery. I apprehend that such men as Astley Cooper and Nélaton, while they equalled any of their purely medical contemporaries in repute, surpassed them in revenue; and we have seen Sir James Paget in the chair of the greatest International Medical Congress that has ever assembled. Yet, certainly, there is an important difference between the medical and the surgical intellect in their most typical examples, and it was indicated in the sneering expression said to have been used by one of the greatest of surgeons, Syme, with reference to an eminent rival:—"A very clever carpenter," he said. A good operator and a great engineer are made out of nearly the same stuff, while the physician is more akin to the philosopher or the natural historian. Public convenience makes it almost necessary that medicine and surgery should be generally practised in conjunction, at

all events in thinly-peopled districts, where, indeed, the function of the apothecary is usually, and almost of necessity, superadded; but in great cities it is probably better that they should be carried on separately. Only an Admirable Crichton could attain and maintain a high degree of skill in all branches of the profession. Whether any, and what, further subdivisions of practice should be made, in communities sufficiently large and wealthy to make them pay, is a matter of detail into which I do not propose to enter, albeit it is not remotely connected with the subject I am next going to touch upon.

One often hears it said that the present is an era of competitive examinations. Those who use the expression may be logically taken to be in some measure opponents of the system; to entertain, at least, suspicions that it is carried too far; that it will not continue for ever, but must and will be abated in time to come. Pass-examinations are thought less objectionable. Scarcely anyone, I believe, has had the hardihood to apply to physic the principles of free trade and of "*caveat emptor*," and to propose the abolition of all examination tests that guard the entrance to the profession. Anyone whom it pleases may indeed attempt to practise the healing art; and there are few of us, I trust, who would seek to restrict the liberty of the credulous to undervalue their own lives and health, and to entrust them to the keeping of charlatans. But the State takes some care that at least they shall do this with their eyes open; and that such charlatans shall not counterfeit the Government stamp which is impressed on those who have complied with its conditions, the chief of which is the passing of certain examinations, framed by some sixteen or seventeen learned bodies, to whom the matter has been entrusted. There is a wide-spread feeling, among

those who have themselves no more examinations to pass, in favour of rendering the pass-examinations both more stringent and more uniform. But perhaps something may be said on the other side. There is no one hard and fast line which would not occasionally shut out a valuable man, while it would include some who would prove stupid and incompetent. If we wish to foster and give fair-play to the original and varied types of mind which abound in England, we should not attempt to run them all into exactly the same mould. No school, no curriculum, should be allowed to be weak in any department; but there might be no harm if a little more stress were laid, here on one class of subject, there on another, liberty of migration being allowed and made easy to students during the latter part of their curriculum. The correlative of too stringent examinations is excessive grinding, a process apt to be very injurious to the mind of the student. They also lead to an undue prolongation of the pupilage. Whatever the number of years allotted for medical education, it is of great importance that the last of them should be occupied in honest and untrammelled efforts to acquire, in hospitals or dispensaries, a practical knowledge of medical work; and men who are worth anything will do this far more freely, vigorously and effectually if they are not bound down in a particular groove by the requirements of some impending examination. Attendance and work should, I believe, be exacted at that period, rather than the performance of a certain specified minimum of paper-work or *vivâ-voce* answering. There is, moreover, one important requirement to be fulfilled by those, who, like the Convocation of a certain University of which I am a graduate, seem to think that every mortal defect can be cured, and can only be cured, by more and more stringent

examinations. Infallible examiners, or something approaching to infallible ones, must be provided. Now experience leads many of us to think that most examiners are far, very far indeed, from being infallible. It would appear that some people think that the possession of extensive and accurate knowledge on the subject of examination is the only necessary qualification for an examiner. This is a great mistake. The possession of knowledge no more enables a man to *examine* than it qualifies him to *teach*. Not very long ago I received from Cambridge the proposals for the foundation of a scholarship in scientific research, in memory of the lamented Professor Balfour. And I observed that among the few canons laid down respecting such scholarship was the following:—"The holder of this Scholarship shall not be elected by competitive examination." "We in Cambridge," said Michael Foster, "are thought to have carried the art of examination to a high pitch of perfection, so high, indeed, that in trying to get hold of the best men we are usually successful in getting hold of the second best." Do not, however, for a moment suppose that, in what I am saying, I am so ungracious as to wish to depreciate the value of class-examinations conducted by the professors themselves, such as those which have given occasion to the ceremony of to-day. These I hold to be of extensive and lasting benefit, and pray do not think me paradoxical when I add that they are perhaps more useful to those who fail than to those who succeed. The greater part of those who, in their subsequent career, attain high distinction, will be found to have been prizemen in their respective schools. But these are mostly men of genius, as somebody defined it, *i.e.*, men possessed of a great capacity for taking pains, men of that robust type of in-

dustry which would labour and succeed, prize or no prize. On the other hand, many who might otherwise remain sluggish and indolent are stimulated to action by the struggle for a prize, and the acquired habit of industry remains with them and is the greatest qualification for success. For the healing art, or rather so much of it as has yet been revealed to mankind, is not acquired once for all. In medicine, more than in most other professions, the labourer remains a student to the end, up to the close of his life in fact; for the pecuniary rewards of medicine rarely include more than a bare competence, a fair average share of the gifts of fortune, and partly on this account, and partly from the love of work and of usefulness, most of its votaries die in harness. But though your own experience, the proper digestion of whose teachings will, after you have quitted the school and the hospital, furnish your chief means of improvement—though, I say, your own laborious experience, and the necessary amount of medical reading to give you some idea of the experience of others, may leave you very little leisure, I would yet counsel you to bestow some part of that leisure upon some intellectual pursuit not too purely professional. It is good for almost every man to have what is irreverently called a hobby outside his ordinary occupation, as you will hereafter have occasion to observe among your patients; and it is good for doctor as well as for patient. The following, within the limits imposed by conscience and opportunity, of a scientific hobby, may have numerous advantages; for example, it may bring your mind into wholesome contact with those of superior men; but, after all, the great use of it is to enable you to withdraw your thoughts at times from the harassing and often grievous and depressing incidents of practice, and to escape, as it

were, for a short while into a by-way or diverticulum, where the untrodden grass and flowers refresh you, and the thickets hide from you the gloomy incidents of daily life and daily struggle. From this point of view you are singularly fortunate in the nature of your academical education, and of the practical experience conjoined with the later stages thereof. Firstly, they give you a knowledge of man. Clergymen, it has been said, see men at their best, lawyers see them at their worst, physicians see them as they are; they see them affectionate or callous, sordid or magnanimous, patient or querulous, pure or sensual. Is it partly owing to this that so many of our most successful diplomatists have begun life as medical men—Crawford, for example, and Sir Rutherford Alcock and Sir John Kirk? Secondly, it tends to foster a kind, forbearing, and unselfish disposition; we are, it has been said, philanthropists by profession. Thirdly, it conducts you as far, at least, as to the threshold of several natural sciences, especially of the different branches of biology. Among these it is easy for a man to choose the one most congenial to his tastes or most convenient to his opportunities. In country districts the local practitioner is usually also the local geologist, botanist, and meteorologist; and in towns the expert microscopist may find some other branch of study in addition to that of normal histology or pathological anatomy. It is noteworthy how often side lights are reflected upon our work from these collateral sciences. I grant that the day when an Admirable Crichton was possible is long past, and that the extent and complexity of human knowledge is now so great that no man can hope to approach its boundaries except at one or two points. On the other hand, let me remind you that schoolmasters tell us how boys from the classical

side often beat boys on the modern side in their own subjects; that the formulator of the law of Correlation of Forces was already a great lawyer, and now adorns the judicial bench; and that the late President of the Royal Society, whose loss we were lately so deeply deploring, was none the less able and thorough in his business as a printer because he shone so conspicuously in mathematics and in optics. Believe me, wide culture need not detract from practical ability, and narrowness is by no means always correlated with intensity.

PRIZE LIST.

SUMMER SESSION.

PRACTICAL CHEMISTRY.—*Prize:* C. J. Glasson. *Certificates:* W. J. Hill, H. F. Semple.

PRACTICAL PHYSIOLOGY AND HISTOLOGY.—*Prize:* A. J. Tomkins. *Certificates:* J. E. Trask, H. L. Evans, C. W. Lockyer, C. E. Dew, H. F. Semple, A. W. Riddell.

MATERICA MEDICA AND THERAPEUTICS.—*Prize:* T. Richards. *Certificates:* H. B. Densham, P. W. Menzies.

OBSTETRIC MEDICINE.—*Prize:* P. W. Williams. *Certificates:* W. G. Thorold, A. M. Gray, F. L. Davis, H. F. Parsons.

PRACTICAL SURGERY.—*Prize:* W. G. Thorold. *Certificates:* P. W. Williams, G. C. Helps.

OPERATIVE SURGERY.—*Prize:* W. J. T. Barker. *Certificates:* F. W. Weir, H. C. Thurston.

PATHOLOGY AND MORBID ANATOMY.—*Prize:* W. J. T. Barker.

WINTER SESSION.

ANATOMY AND PHYSIOLOGY, JUNIOR CLASS.—*Prize:* W. M. Barclay.

JUNIOR CLASS OF ANATOMY.—*Lecturer's Prize:* A. H. Joseph. *Certificates:* H. F. Semple, W. J. Watkins, C. E. S. Flemming, C. T. Hudson, A. Leche.

JUNIOR CLASS OF PHYSIOLOGY.—*Certificates:* A. H. Joseph, C. E. S. Flemming, H. T. S. Aveline, T. R. Baker, H. A. Burleigh, R. F. W. Tucker, E. Ward, W. J. Watkins, H. F. Semple, C. T. Hudson.

SENIOR CLASS OF ANATOMY.—*Prize:* A. J. Tomkins. *Lecturer's Prize:* H. I. Pocock. *Certificates:* L. H. Williams, F. S. Hawkins, C. W. Lockyer, W. T. Ord, C. J. S. Shaw, J. B. Webb, C. J. Glasson, A. R. Aubrey, J. E. Trask.

SENIOR CLASS OF PHYSIOLOGY.—*Prize:* A. J. Tomkins. *Certificates:* H. I. Pocock, H. L. Evans, L. H. Williams, A. W. Riddell, C. J. S. Shaw, W. C. Swayne, F. S. Hawkins, A. R. Aubrey, T. Richards, J. E. Trask.

PRACTICAL ANATOMY.—*Prize:* L. H. Williams.

CHEMISTRY.—*Prize:* W. M. Barclay. *Certificates:* E. Ward, H. T. S. Aveline, A. Leche, R. J. Marks, H. F. Semple, W. J. Watkins, G. Banbury.

MEDICINE.—*Prize:* A. N. Little. *Certificates:* W. J. T. Barker, W. G. Thorold, W. Basset.

SURGERY.—*Prize:* W. G. Thorold. *Certificates:* A. N. Little, W. H. Stevens, W. Basset, P. W. Williams.

BRISTOL ROYAL INFIRMARY.

SUPLE'S SURGICAL PRIZE, A GOLD MEDAL AND SEVEN GUINEAS IN MONEY.—W. G. Thorold.

SUPLE'S MEDICAL PRIZE, OF THE SAME VALUE.—H. C. Thurston.

TIBBITS' MEMORIAL PRIZE, OF THE VALUE OF £7, FOR PROFICIENCY IN PRACTICAL SURGERY.—H. H. Tomkins.

CROSBY LEONARD PRIZE, FOR PROFICIENCY IN SURGERY.—H. H. Tomkins.

PATHOLOGICAL PRIZES.—G. G. Adams, W. D. Duffett, H. C. Thurston.

BRISTOL GENERAL HOSPITAL.

CLARK SCHOLARSHIP, OF THE VALUE OF £15, FOR PROFICIENCY IN SURGERY.—F. Morton and H. W. Windsor-Aubrey, equal.

SANDERS' SCHOLARSHIP, OF THE VALUE OF £22 10S., FOR PROFICIENCY IN MEDICINE, SURGERY, AND OBSTETRIC MEDICINE.—F. Morton.

SECOND SANDERS' SCHOLARSHIP, OF THE SAME VALUE.—H. W. Windsor-Aubrey.

LADY HABERFIELD PRIZE, OF THE VALUE OF £30, FOR PROFICIENCY IN MEDICINE, SURGERY, AND OBSTETRIC MEDICINE.—W. J. T. Barker.

PATHOLOGICAL CLERKSHIP PRIZE, OF THE VALUE OF £3 3S.—C. E. Evans.

BRISTOL GENERAL HOSPITAL. *Winter Session, 1883—84.*—The Martyn Memorial Entrance Scholarship, of the value of £20, for proficiency in Classics, Mathematics, Modern Languages, and Physics, has been awarded to Mr. H. F. Devis.

Notes on Books.

Good Remedies—out of Fashion. By CHARLES J. HARE, M D. Cantab., F.R.C.P. London: J. & A. Churchill. 1883.

Though elevated to the dignity of book-form this reprint of Dr. Hare's address to the Metropolitan Counties Branch of the British Medical Association would, in respect of quantity, more fittingly have been issued as a *brochure*. But, voluminous though it be not, it yet affords food for reflection upon the mutability of fashion in medical treatment. Dr. Hare's experience and knowledge are extensive, and he ought to be intimately acquainted with the relative prevalence of various methods of treatment; but we should not have thought that the use of emetics in Croup, Bronchitis, and disordered gastric secretion was so completely extinct as he considers it to be. So also of Opium he states—we hope truly—"it was formerly much more used than now." If this be indeed the case, it can only be because Opium and its derivatives have been more or less replaced by other narcotics, not because the ever increasing struggle for daily existence renders less frequent the necessity for employing nervine sedatives.

Something like a moiety of the lecture is devoted to the consideration of "Bleeding in one form or another," which, in Dr. Hare's opinion, "has more than any other means whatever the effect of assuaging pain, of modifying the course of diseases and of saving life." This Dr. Hare "steadfastly believes," in part because "the united testimony of the sages of our profession for more than 2,000 years bore witness to" its trustworthiness. For our own part we cannot agree that any article of belief should be accepted as true on such grounds. Do we still think the arteries are passages for air? The ancient doctrine of Signatures was still so firmly held in More's day that he based upon it his proof of the existence of an intelligent Creator, and to discredit it he considered was to be an atheist. Where is that opinion now? The possession of aphrodisiac and semi-human properties by the mandrake was universally believed from before the time

of Rachel until after the age of Shakspere, more than 3,000 years. Sir T. Browne thought those properties, if they existed, little short of miraculous; are they now thought anything but fabulous? On the other hand, however, it is only fair to remember that confidence in the reputed benefits of bleeding still continued to be had after medicine had begun to be placed upon a scientific basis of investigation and experiment, and the practice must not therefore be discarded without receiving at the hands of intelligent practitioners an unbiassed employment in the treatment of certain diseased conditions. One cannot but be forcibly struck by the rapid and complete revulsion from the free use of leeches which took place between the years 1842 and 1862, as brought out by Dr. Hare's statistics. If, with our author, we agree to abandon the theory of change of type of disease to explain the change of plan of treatment, we have nothing else to fall back upon for an explanation but the recoil from that opinion which, with some exaggeration, Le Sage puts into the mouth of Sangrado:—"Sçaches, mon ami, qu'il ne faut que saigner, et faire boire de l'eau chaude. Voilà le secret de guérir toutes les maladies du monde. Ce simple secret que je te révèle est renfermé dans ces deux points, dans la saignée et dans la boisson fréquente. Je n'ai plus rien à t'apprendre: tu sçais la médecine à fonds."

Our profession has never perhaps been more severely ridiculed than by Molière, but the perusal of this address vividly recalls Sganarelle's words:—"Oui cela était autrefois ainsi; mais nous avons changé tout cela, et nous faisons maintenant la médecine d'une méthode toute nouvelle." Perhaps in our capricious and utter abandonment of venesection we are no more right than "le médecin malgré lui" was in his ideas as to the anatomical relations of the Heart and Liver. Perhaps, also, now that port wine is again coming into vogue, we shall again witness the modes of treatment of which it was formerly the social contemporary. We commend Dr. Hare's book to our readers' thoughtful perusal.

Alcoholic Inebriety, from a Medical Standpoint. By JOSEPH PARRISH, M.D. Philadelphia: P. Blakiston, Son, & Co. 1883.

It does not appear quite certainly from the Preface whether this book is intended for the Profession or the laity, but apparently it is addressed to both sections of readers; in which

case, between the two stools, it goes near to fall to the ground. Its phraseology is in great part too technical to be intelligible to the "general reader" of average education, while its style is too vague to render it of much value in practice to the physician.

The list of contents promised a work of great interest and instruction, and had such chapters as, *e.g.*, "Inebriety and Insanity—How related"; "How to deal with Inebriates"; "Different Alcohols, and their Effects;" and "The Psychology of Inebriety" been adequately and clearly handled, the literature of drunkenness and its cure would have received an addition of serious value. The treatment of these most important subjects, however, is too superficial to leave any distinct impression on one's mind, or to add recognisably to one's information.

The excellent and laudable object of this book is the advocacy of the treatment of Inebriates in Asylums, or Hospitals specially devoted to the purpose, instead of in private houses or Lunatic Asylums. Such institutions have, it is true, met with no very wide-reaching adoption in this country, but that is probably because the entrance into, and residence within them are purely voluntary upon the part of the patient. The case related on pp. 176, 177, enables one to realise how different from those in our own country are the effectual facilities for restraining the Inebriate in the United States; where, therefore, the inhibitory treatment of drunkenness can be more efficiently carried out and attain a higher degree of success.

Like a lady's letter, the pith of this book lies in the postscript, or summary at the end, where, in fifteen propositions, the author gives an abstract of the somewhat nebulous statements contained in the body of the work. Whether after each proposition the reader will feel inclined to write Q.E.D., is a matter of question, though taken collectively they would receive a *general* assent from the medical readers of the work.

As a specimen of our author's style, here is his view as to the origin of the *disease* Inebriety:—

"This disease, however, is not to be regarded as an entity that approaches and invades the human organism from without, but rather as a variation of natural function, having its source in the system itself. It may be implanted somewhere in the complex structure which constitutes the man, by hereditary taint. It may be, by some obscure and undefined qualities coming together, which, by their active and retroactive processes, originate and evolve symptoms that indicate a departure from a healthy standard."

Practical Pathology: A Manual for Students and Practitioners. By G. SIMS WOODHEAD, M.D., F.R.C.P.E. Edinburgh: Young J. Pentland. 1883.

There has long been felt by student and practitioner alike, the need of some work on Practical Pathology, which shall teach us how to get at the various organs of the body by post-mortem examination; what to observe when the cadaver is opened; and how to recognise the various lesions which have either directly caused, or have indirectly contributed to death. We then want a book to tell us concisely and clearly the various characteristics of disease as they are written on the organs, before section, and after it, on the cut surface. Then, how to harden and preserve pieces of these, how to cut them for microscopic examination, and lastly, how to stain, mount, and examine them.

Now, we consider that the work before us satisfies our demands. It opens by giving us full instructions as to the way of conducting a post-mortem examination; it then accurately describes the morbid appearances of the organs as seen on the outside, as well as on section of the whole organ. Then we are told how to preserve and harden pieces of the diseased tissue; the best stains to use; what we see under the low power of the microscope (50 diameters); and lastly, what the high power (300 diameters) reveals.

Now, this mode of investigation is systematic and thorough, and if properly carried out cannot fail to yield good results. It is the plan adopted in the University of Edinburgh, in which the author is at present Demonstrator of Practical Pathology, and conducts the class of students who are working at this subject under the superintendence of Professor Greenfield; and, under the management of Professors Sanders, Hamilton, and Greenfield, it has proved itself to be the only thorough way of teaching the subject.

Besides clear and practical description of morbid conditions, we find in this book another very excellent and striking feature, and that is the really beautiful coloured illustrations, of which there are nearly 150 given us. These illustrations are not only pretty to look at, but, seeing that they are mostly correct copies from nature, having been drawn largely from the author's own collection, and seeing that Dr. Woodhead has stained them with fluids which are most capable of showing up the diseased structure, and has coloured his plates in exact imitation of these stains, they are especially valuable and highly instructive.

Looking, then, at the immense amount of practical informa-

tion which is contained in this book, the clearness of most of the descriptions of lesions, and the beauty and faithfulness of the numerous plates, we consider that Dr. Woodhead is to be congratulated on this his first effort as an author, and we hope that the book will have the large circulation that it deserves.

A special word of praise is due for the admirable manner in which the publisher and printer have carried out their work—far above what we are accustomed to in England, and quite equal to the best American publications.

Clinical Notes on Cancer. By HERBERT L. SNOW, M.D. Lond., and Surgeon to the Cancer Hospital, Brompton. Pp. 96. London: J. & A. Churchill. 1883.

In this work, as the author himself says in the preface, "no attempt has been made at elaborate description or exhaustive investigation," and the result is just such as might have been expected. If the endeavours to avoid the elaborate only lead to a falling into the inaccurate and the involved (pp. 14 and 15), and an eschewing of exhaustiveness in investigation results in nothing more than a record of vague "impressions," then we think the author had better not have written a book. It would be easy, if space permitted, to quote whole paragraphs as specimens of logical fallacies. He ventures (as he says) upon a "feeble attempt" *(sic)* to controvert the Heredity Fallacy, and the result does not transcend the author's expectations. Speaking of breast-scirrhus, he refers to a peculiar condition where there "is a tenderness on pressure, often combined with perceptible enlargement, in the head and neck of the humerus which corresponds to the disease. . . . This may disappear (both enlargement and tenderness) after operation." Now, no statement such as this ought to be made by a scientific man without irrefragable pathological proof in its support. If it is inflammatory œdema, then it is not enlargement of the head and neck of the humerus; and if it is bony enlargement, then it is cancerous and will not disappear after operation. But hear what he says in the next sentence:—"It would seem to be the first manifestations of that implication of the osseous system which becomes so painfully evident in many cases of advanced scirrhus," and excision of the breast may cure it!

The practical part of the work is on a level with the theoretical, and certainly not abreast of the highest class practice of to-day. In uterine cancer, for instance, if potassa fusa and

perchloride of iron fail, and he is granted a "long cervix and disease limited to the margin of the os uteri," he would use the galvanic cautery. This is the limit of his resources. Has he never heard of supravaginal amputation of the cervix, or of extirpation of the whole uterus?

The work is one more example of how (to use the author's own words) "impressions received through constant familiarity with common every-day cases," such as specialists see in special hospitals, may be absolutely impotent for the furtherance of science.

Asiatic Cholera. A Report of an outbreak of Epidemic Cholera in 1876 at a Camp near Murree. By CHARLES MOORE JESSOP, M.R.C.P., Brigade Surgeon H.M.'s British Forces. London: H. K. Lewis. 1883.

This brief outline of the author's personal experience of a disease which is now attracting so much notice, both from the public and from scientific investigators, directs attention to one special point in the etiology of cholera. He endeavours to show that the disease, as it is seen in epidemic form, is a "selective" disease, seizing upon those who have some invisible and unhealthy defect, and hence attention to the minor conditions of health known as dyspepsia is imperative in "cholera years." He attributes much of the cholera he saw to the "plum dough and boiled cows' heel messes," in which the troops generally indulged.

A Manual of Midwifery for Midwives. By FANCOURT BARNES, M.D., M.R.C.P. Second Edition. Pp. 181. London: Smith, Elder, & Co. 1883.

The second edition of this little work has been improved by several corrections and additions. We think that future editions might be made more useful to midwives by a judicious pruning of the purely scientific part of the work, and a fuller and more exact and detailed account of their purely practical duties. As it exists, it is undoubtedly well put together, and will "supply a felt want."

Medical Extracts.

Infarctions and Embolism of various Organs.

Professor D. J. Hamilton thus sums up a paper on the above subject:—

"The chief points that I would wish to draw attention to are:—

"1. That the infarctions of the spleen and kidney are due to the blood supply being cut off from the part, and the most common source of this is embolic plugging of the respective arteries.

"2. They are not usually accompanied by hæmorrhage unless in the zone of inflammation which surrounds them, although congestion and punctiform extravasation are possibilities in the early stages.

"3. They are veritable necroses, the necrotic changes within them resembling those which follow the total abstraction of the blood supply in other parts of the body.

"4. They are in course of time absorbed and the formation of a depressed cicatrix follows.

"5. Embolism of the arteries of the brain is accompanied by a similar necrosis, but, as the arteries of the encephalon are terminal only in certain regions, the necrosis of the part supplied by an occluded artery is never so widespread as in the case of the spleen and kidney. Hæmorrhages may occur here owing to the attempt to nourish the part by collateral channels.

"6. The hæmorrhagic infarction of the lung is simply an apoplexy due to various causes, but by far the most common is rupture of capillary vessels unduly distended by regurgitant pressure from valvular disease of the heart. Its wedge shape is caused by the shape of the bronchus and air-vesicles in which the effused blood is contained, and not by the distribution of a terminal branch of the pulmonary artery. The lesion usually has nothing to do with pulmonary artery embolism, but a

hæmorrhage from any cause, if situated at the periphery of the lung, will have the usual characters of a hæmorrhagic infarction.

"7. The blood in these pulmonary infarctions is usually absorbed, and no trace of their former existence remains."—*Liverpool Medico-Chirurgical Journal*, July, 1883.

The Diagnosis of Movable Kidneys.

"It is an evidence of the minuteness and care with which modern medical science attacks the various problems before it when we find a whole book devoted to the diagnosis of 'l'ectopie rénale,' or misplaced movable kidney. Dr. Frédéric Buret is the author of such a work,* and it is a contribution of practical value to physicians. Although less than one hundred cases of movable kidney have been, so far, reported, it is a trouble which is no doubt much more frequent than is supposed. Such is the opinion of Buret, and Dr. William Roberts, and others, and it is strongly supported by the investigations of Oppolzer, who, in a series of five thousand five hundred patients, found that twenty-two had movable kidneys, giving a proportion of one in two hundred and fifty. It is not improbable, as Roberts says, that many cases of obscure abdominal pain and of gastro-enteric disturbance are due to this cause. Movable kidney occurs in women much oftener than in men, the proportion being as six to one. It is generally an acquired trouble, and its existence is due chiefly to parturition, tight-lacing, sympathetic renal congestion during menstruation, and violent exercise or injury. The most prominent symptoms are a dragging pain in the loin, and gastro-intestinal disturbances, nervous symptoms, hysteria, and hypochondriasis may also be provoked by it. Epigastric pulsation is often present, but the only certain evidence of the trouble is, of course, the presence of a movable tumor which can be felt.

"The chief value of Dr. Buret's work is in the collection of cases which he has made illustrating mistakes in diagnosis. These cases, fifty in all, he divides into three classes: 1st, those in which no tumor was recognised, and no idea of the real trouble was obtained; 2nd, those in which a diagnosis was vaguely formulated; 3rd, those in which a tumor was discovered but its nature not recognized.

"In the first class he cites fifteen cases. These had been treated as cases of crural, or lumbo-abdominal neuralgia, of renal colic, hepatic colic, *embarras gastrique*, hysteria, and chronic peritonitis.

* Du Diagnostic de l'Ectopie Rénale, par le Dr. Frédéric Buret, Aux Bureaux du Progrès Medicale, pp. 93. Paris, 1883.

"In the second class the trouble had been mistaken for 'abdominal tumor' and 'affection of the liver.' Moxæ were applied in some cases and operation suggested.

"In the third case a diagnosis was made of biliary obstruction, enlarged liver, tumor of right lobe of the liver, cancer of the liver, enlarged gall-bladder, biliary calculus, cancer of the pylorus, displaced spleen, and ovarian cyst.

"The list thus given sufficiently illustrates both the inventive imagination of the doctor and the various symptoms which renal ectopia may produce."—*The Medical Record* (New York), July 21st, 1883.

Worms.

Dr. D. P. Duncan says "Some members of our profession still cling with bull-dog tenacity to the opinion that worms do not affect the health of children, and that they are natural to them. The latter may or may not be true, but when they accumulate in the intestines they produce the same disturbance that any foreign, indigestible substance would do. We find the picking of the nose, swollen lower eye-lids, restlessness in sleep, groaning, gritting teeth, starting, and lastly, spasms.

"Worms kill more children than teething; and when you find the above symptoms with a strawberry tongue and a fever, which will attack several times daily, going off as frequently in cold sweats, you can swear that you have a case of worms, and had as well prepare and attack them.

"Now as to the best means of getting rid of them. I use the fluid extract of senna and spigelia in teaspoonful doses for patients of 8 or 10 years of age, and less in proportion, night and morning, for three nights and days, following this up each morning with a good dose of castor oil, provided the S. and P. does not act. Then wait three days, and again institute the same proceedings, and for the same length of time.

"This treatment is for the lumbricoid. For the oxyuris, or 'thread worm,' I use any bitter infusion by enema, sulph. quinine, or the mur. tr. iron suitably weakened, followed by an enema of common salt and milk—warm water half an hour afterwards, which will destroy and expel them.

"The symptoms of the presence of the worm are the same as the former, with the exception that in the latter you will find the sufferer scratching the anus. If every practitioner will use these he will be gratified by the restoration to immediate health of many a little sufferer who would otherwise linger in sickness for many months and perhaps eventually die."—*Therapeutic Gazette* (Detroit), October, 1883.

Two cases of Rupture of the Heart.

At the meeting of the New York Pathological Society, on October 24th, 1883, Dr. Ferguson presented the specimens, the first one of which was removed from a man who had had an attack of dyspnœa and about two hours afterwards was found dead in the water-closet. The body was well nourished; the kidneys were atrophied, giving well-marked signs of diffuse nephritis; the lungs were congested; the pericardium contained a large amount of blood; the heart-walls were pigmented and showed signs of general myocarditis. Near the apex in the left ventricle was a rupture three-quarters of an inch in length.

The other specimen belonged to a man who had received an injury on the back of the hand, tearing away the soft structures and exposing the extensor tendons. The wound was dressed antiseptically, and the patient did well the first three weeks, but the muscles of the face and neck and thorax then became contracted, breathing was interfered with, and the patient died in one of the tetanic convulsions. At the autopsy the brain and cord were found congested, the lungs œdematous and congested; the pericardium contained a large amount of blood; the heart was normal, except that in the right ventricle there was a small rupture, admitting a probe. In the one case, therefore, the rupture was due to disease of the cardiac muscle complicated by diffuse nephritis; in the other, to the convulsions of tetanus.—*Philadelphia Medical Times*, November 3rd, 1883.

Disease Germs: their Vitality; Means of rendering them Innoxious.

M. Paul Bert, President of the Paris Society of Biology, in discussing the question of disease germs recently before that society, said that he had received numerous letters from persons engaged in handling mercury who believed that their occupation afforded them immunity from contracting cholera. Workers in copper are said to enjoy a like immunity from the disease. These supposed facts led M. Bert to seriously question whether there did not exist for each sort of disease germ a destructive agent in the presence of which the germ was unable to develop. M. Davaine, with the view of answering this same question, instituted a series of experiments upon the bacteria of anthrax. M. Bert, with M. Capitan, undertook a similar series of experiments upon the virus of glanders. This virus, "sown" in solutions of sulphate of copper, bichloride of mercury, chloride of gold, or in oxygenated [? ozonized] water, was not fruitful; on the contrary, its development was rapid in solutions of permanganate and of carbonate of potassium.

A first question relative to the vitality of disease germs is, then, one of the medium in which they find lodgment. But the question is also pertinent if, even in a hostile medium, the germ cannot multiply if the quantity of the virus is considerable, or if the medium which receives it is not up to the standard strength, as for example, an organism that has been overworked and exhausted. M. Bouley observed that it was a matter of daily observation that jaded animals were more liable than others to contract glanders or other contagious diseases. The experiments of M. Chauveau on sheep proved that large quantities of virus would avail when small quantities were inert. He produced anthrax in animals by the introduction of virus in considerable quantities when smaller amounts introduced into the same animals had failed to generate the disease.—*New York Medical Journal*, November 3rd, 1883.

The Symptomatology of Aortic Aneurisms.

Dr. J. Graham Brown, in writing on an article on this subject by Guttmann (*Zeitschrift f. klin. Med.*, vol. vi. p. 131), says:—"It is well known that in cases of aneurism of the thoracic aorta the pathological process which gives rise to the aneurism—the endaortitis chronica deformans—is liable to attack the aortic valves, and thereby occasion insufficiency. In such cases the symptoms of aortic regurgitation add themselves to those of aneurism—if, indeed, the aneurism give rise to any symptoms at all, which is often not the case. In the patient whose case is recorded in this article, however, the reverse was the case, an aortic aneurism giving rise to all the symptoms of aortic regurgitation in spite of complete integrity of the semilunar valves. The signs and symptoms in connection with the circulatory organs which this patient exhibited were the following:—The apex-beat was strong, diffused, and heaving. The cardiac dulness extended from the third left intercostal space above to the sixth rib below, and from the right border of the sternum on the right to a point slightly outside the nipple on the left. On auscultation, there was to be heard over the body of the sternum, the xyphoid cartilage, and in the second left intercostal space, a loud long-drawn diastolic murmur. At the cardiac apex this murmur became almost inaudible. At the same time, a less loud and short systolic murmur was heard over the sternum, and in the second right and left intercostal spaces. Along with this murmur there was faintly audible a systolic sound. The second aortic sound was inaudible, nor was the second pulmonary sound to be heard in its usual site. At the lower end of the sternum a diastolic sound was faintly heard, but whether it was of aortic or pulmonary origin could not be

determined. In the carotid and subclavian arteries the first sound was replaced by a murmur synchronous with the heart systole; the second sound was absent. When the stethoscope was lightly applied over the brachial artery, a diastolic sound was audible, which changed into a murmur when pressure was increased. The same phenomena occurred in connection with the femoral artery, and in that vessel there was further audible, when pressure was still more increased, a double murmur systolic and diastolic. All the arteries pulsated strongly, exhibiting beautiful examples of the *pulsus celer*. The diagnosis arrived at from these data was one of aortic insufficiency, but this was not confirmed on post-mortem examination. There was then found hypertrophy of the left ventricle, and a large aneurism involving the ascending aorta and the arch. The aortic valves were completely normal.

In this case, therefore, all the ordinary signs of aneurism (pulsation, dulness, &c.,) failed, while all these of aortic insufficiency were present, along with full integrity of the semi-lunar valves. Guttmann goes on to analyse the physical signs present:—The diastolic murmur, he believes, must have originated in consequence of the irregularity in the rebound-wave in the aorta which normally closes the semi-lunar valves and causes the second sound. The absence of a second sound in the carotid and subclavian arteries is to be explained by the loudness of the diastolic murmur over the heart. The aneurismal sac allowed sufficient back-flow of blood from the arteries to account for the *pulsus celer;* and in the same way is to be explained the abnormal auscultatory phenomena in the vessels.

Thus it is seen that all the so-called cardinal symptoms of aortic insufficiency may exist without any lesion of the valves, in cases of aortic aneurism where hypertrophy of the left ventricle also occurs.

A very similar case came some time ago under the observation of the writer of this abstract, in which all the signs of aortic insufficiency existed, but in which, on post-mortem examination, the valves were healthy, and an aneurism was found which had given no indications of its presence during life. Such observations must make the diagnosis of aortic incompetence very guarded, but it is to be remembered that the conditions under which it can be thus simulated must occur but rarely."—*Edinburgh Clinical and Pathological Journal*, November 10th, 1883.

The Pathology of Phthisis and its Laryngeal Complications.

At a meeting of the Pathological Society of Philadelphia, on October 25th, 1883, Dr. Seiler read a paper on the pathology of

tuberculosis and phthisis and the laryngeal complications of the two diseases. He defined tuberculosis as a self-infectious disease, manifesting itself primarily by the production of minute neoplasms, called miliary tubercles, which rapidly underwent retrograde metamorphosis ending in caseation, being due to the dissemination of infectious material throughout the lymph channels. This infectious cheesy matter was the product of scrofulous inflammation, and it might remain encapsulated for a long time. He then described the histological characteristics of tubercles, and showed how they might produce consolidation of the lung tissue by exciting secondary inflammation. He defined phthisis as a progressive consolidation of the lung tissue, due to a more or less localized inflammation affecting primarily the apices, followed by retrograde metamorphosis. He thought the different forms and stages, as described by many authors, were merely differences in the severity and extent of the ulcerative process. As ætiological factors, he mentioned the various causes of lowered general vitality, predisposing the respiratory organs to chronic inflammation, including heredity, peripheral nerve irritation, hypertrophic nasal catarrh, insufficient aëration of the blood, etc. Improving the general vitality would prevent an outbreak of the disease, and lead to recovery where too much lung tissue had not been destroyed. Such improvement was to be brought about more by proper feeding and exercise in the open air than by the use of drugs. On the other hand, tuberculosis was always fatal, and treatment was of no avail; but a good deal could be done to prevent the formation of the cheesy deposit by improving the health of scrofulous patients early in life, thus preventing the subsequent outbreak of tuberculosis.

The laryngeal complications of both diseases were then considered in detail, and their differences were pointed out. He stated that the laryngeal lesions never appear prior to the lung disease in phthisis; that they were characterized by a peculiar pallor of the mucous membrane; the tumefaction generally affected the posterior portion of the organ, and the ulcerations were shallow and had a tendency to spread on the surface, and tubercles or cheesy deposits were never found in the tissues of the larynx. In tuberculosis, on the other hand, tubercular deposits had been found in the larynx prior to the lung complications; the mucous membrane was of a livid red color; the tumefactions were more commonly observed in the anterior portions of the larynx; and the ulcerations were deeper, with raised edges, and often extensive destruction of tissue.

Dr. Seiler closed with the remark that the indiscriminate use in our literature of the terms phthisis and tuberculosis in referring to lung disease was calculated to mislead the student,

and made careful investigation into the pathology and ætiology of these diseases extremely difficult, if not impossible.—*New York Medical Journal*, November 10th, 1883.

Surgical Expedients in Emergencies.

In a paper read before the Medical Society of the State of Pennsylvania on May 10th, 1883, Dr. R. J. Levis records some of the hastily-devised resources on which the exigencies of active surgical practice had frequently obliged him to rely. Amongst others he gives the following:—

"The absence of a catheter on one pressing occasion led me to contrive a ready means of evacuating the urine. The recourse was to a piece of iron bell wire, bent double on itself, and the blunt doubled end passed readily through the urethral tract to the bladder. The distention of the urethra by the doubled wire allowed the urine to freely pass between the wires.

"*A female catheter* may be extemporized from a short piece of rye straw, the end of which is to be closely wrapped for a short distance with thread; or the end of the straw may have its sharpness removed by dipping into melted sealing wax. The stem of the ordinary clay tobacco pipe is also efficient for the purpose. Such crude substitutes, when oiled, are readily introduced.

. . . "I once, on a pressing occasion, bled a patient at the bend of the elbow, with perfect ease and precision, with but a blunt-pointed and dull pocket knife, by resorting to a simple, convenient expedient. Having put on the usual constricting bandage to distend the veins, I first transfixed the most prominent vein with a fine needle. Thus held securely, it was very easy, with even the dull knife, to cut a valvular incision into the vein, and the blood flowed freely.

"In a case of *hemorrhage from the intercostal artery*, from homicidal stabbing, I arrested the flow immediately by making pressure within the pleural cavity, directly on the vessel, by introducing into the wound the handle of a door-key. The key was then turned transversely so as to make direct pressure, and maintained in that position for some hours, until there was no more tendency to hemorrhage. The same mechanical action might be effected by the similar use of the handle of an ordinary gimlet.

"The hæmostatic action of hot water does not seem to be sufficiently known and appreciated among practitioners. It is so effective, and can be so readily applied, that it may well displace from practice all other hæmostatics. Water at a temperature not beyond tolerance of the immersion of the hand in it, which is a temperature of from one hundred and fifteen to one hundred and twenty degrees, is ordinarily all that is necessary;

but in some cases not amenable to treatment by the ligature, a temperature above 160° F., the coagulating point of albumen, may be necessary.

"The facility with which rectal injection can be performed with large quantities of fluids, by hydrostatic pressure, renders not essential the use of a syringe, if a piece of india-rubber tubing long enough can be obtained. The lower bowels may also be distended, in cases of intussusception, by injecting water and carbonic acid gas, forced from the ordinary mineral water bottle or syphon, fitted to the rectal tube.

"For antiseptic use many readily procured substances may well replace carbolic acid. None is so cheap and efficient as that most neglected preventer of putrefaction, sulphurous acid, made simply by exposing water to the fumes of burning sulphur in a close chamber. The antiseptic action of a saturated watery solution of turpentine has also the advantage of convenience of procurement and cheapness. For this purpose turpentine should be kept continually in water and exposed to warmth, and frequently agitated. Diluted alcohol has merits as an antiseptic which have not received proper attention."—*The Polyclinic* (Philadelphia), August 15th, 1883.

Stretching the Optic Nerve.

Dr. M. Landesberg, in a paper read before the Philadelphia County Medical Society, on June 13th, 1883, records the result of his investigations into the therapeutic value of stretching the optic nerve in conditions of atrophic degeneration:—

"Stretching the optic nerve I have performed twenty-one times in thirteen patients—sixteen times after the following method. The lids are separated by the speculum; the incision of the conjunctiva is made on the insertion of the internal muscle, and the latter secured by a silk ligature. The tendon of the internal muscle is dissected, leaving a small stump on the sclera, in order to facilitate the reunion, and Tenon's capsule and the underlying tissue are loosened from the sclera towards the optic nerve. The eyeball is turned outwards to the utmost by means of fixation-forceps, and a strabismus-hook is passed through the opening of the conjunctiva along the eyeball down to the optic nerve, which is caught from above and stretched 'gently' three or four times. The eyeball is then brought into position, the internal rectus is reattached, and the conjunctival wound is closed by one or two sutures. Finally, a compressive bandage is applied for two to three days.

"In five instances I have performed the operation without tenotomy, by making a slit in the lower and outer part of the

conjunctiva near the corneal margin, and passing a strabismus-hook between the external and inferior muscle down to the optic nerve. This procedure is very simple, and more harmless than the other one, but it has the great disadvantage of allowing the optic nerve to slip very easily from the strabismus-hook, especially if the patient does not keep quiet.

"The operation itself was in no instance followed by any bad consequences, either local or general, and the symptoms of reaction were such as we usually observe after a strabismus-operation."—*Philadelphia Medical Times*, August 25th, 1883.

Records of the cases are given, and the results were either improvement or *nil*.

The Prophylaxis of Ophthalmia Neonatorum.

Dr. A. H. F. Barbour says that in a paper (*Archiv. f. Gynäkologie*, Bd. xxi. Hft. 2) on this subject "Credé sums up his experience in the treatment of this affection. During the ten years 1870-1880, the number of children affected with ophthalmia at the Leipzig Maternity was about 12 to 15 per cent. (during two years it was only 6 to 7 per cent.) During the last four years, in which his special treatment has been carried out, it has fallen to ·25 per cent. in one year, and 0 per cent. in the other three. With regard to its etiology, his conclusions are: (1) that it is caused by a specific virus, which is identical with that of gonorrhoea; (2) that the poison, which is found chiefly in patients affected with granular vaginitis, finds its way into the conjunctiva principally during the second stage; (3) that the normal vaginal secretion does not cause ophthalmia; (4) that the existence of granular vaginitis was only proved in a small percentage of his cases, because several were admitted to the Maternity already in labour; (5) that a prolonged second stage (of more than an hour), as well as an early rupture of the membranes (three hours before the birth of the child) and the birth of large children, favour infection. The period of incubation is usually three, rarely five days. Antiseptic vaginal injections and washing of the child's eyes had been tried, but found insufficient to prevent ophthalmia. This led Credé to experiment with a view to destroying the germ, and he has found that a *two per cent. solution of nitrate of silver* effects this. The eyes are first washed, and then a single drop of the solution is let fall on the conjunctiva; no further attention is required. In some cases, specially premature children, some hyperæmia of the conjunctiva follows; in the majority there is no reaction. As 33 per cent. of the children received as blind into the asylums in Germany and Austria owe their condition to this disease, we are not sur-

prised to learn that Credé's method is being enforced by the Government Board of Health."—*Edinburgh Clinical and Pathological Journal*, November 24th, 1883.

Iodoform in Corneal and Conjunctival Diseases.

Dr. A. G. Heyl quotes from *Arch. f. Ophthal.*, 1883:—"Vossius gives the following results of considerable experience with iodoform. In a case of gonorrhœal ophthalmia it increased the discharge and swelling; one cornea, which previously was involved, was made worse, and the other, which had been intact, likewise became affected. Only one application was made, when a change of treatment was necessary. In blennorrhœa neonatorum it has no special value. In trachoma it sometimes seemed to do good, but oftener not: upon the granulations it did not act well, but sometimes when acute increase of the pannus would occur the iodoform seemed to relieve. Nor did it prove of value in phlyctenular conjunctivitis, pannus scrofulosis, parenchymatous keratitis. On the other hand, remarkably good results were attained in the treatment of corneal ulcer. Ninety corneal ulcers form the material upon which this statement is based. Especially in the ulcus corneæ serpens was the value of the remedy manifest. Thirty-six cases of this kind were treated: in seventeen of these severe dacrycystitis existed; in one old granulation with profuse purulent secretion. In three cases, Saemisch's operation was performed: in two of these, in spite of this and the iodoform treatment, the whole cornea became involved. In thirty-two of the cases surprisingly favorable results were attained by the iodoform alone. The iodoform was used in powder or in the form of salve. It seemed to produce an anodyne effect, relieving the violent ciliary pain and irritable condition of the eye. [An important practical matter seems to find illustration in this experience,—viz., that the treatment of local infection with septic material must vary with the nature of the infecting germ. Thus certain septic forms of conjunctivitis and keratitis are very much helped by the application of heat. The form of corneal ulcer above referred to, where infection very often comes from the lachrymal sac, is certainly not very susceptible to the action of heat, but seems to require a substance which has a different therapeutic action. H.]"—*Philadelphia Medical Times*, November 3rd, 1883.

A Fœtus remaining Fifty-six Years without Change in a Case of Extra-Uterine Pregnancy.

The following is quoted from the *Gazette Médicale de Nantes*:—"M. Sappey, in a very interesting communication to the

Academy of Sciences *(Courrier Médical)*, reported a case that is probably without parallel in medical annals. A woman at 28 years of age became pregnant, but was not delivered. She carried an abdominal enlargement until she died at eighty-four years. At the autopsy a large tumor was found outside of the uterus, connected with the right Fallopian tube. The wall of the cyst was tough, and its surface calcareous and nodular. After removal the cyst was divided with a saw, and, very much to the surprise of the spectators, a fœtus of about seven months' development was found in its interior. During its long captivity it had been perfectly preserved, not having undergone any alteration. 'It was in the ordinary attitude, the limbs flexed upon the trunk, the head inclined on the thorax. The pupillary membranes were completely developed, and fixed the age at from six to seven months. The cutaneous envelope, the superficial organs, as well as the viscera in the large cavities of the body, all the muscles and soft parts, retained their consistence, their suppleness, and their normal colour. The fœtus, in short, presented all the features of an infant which had just gone to sleep.' This case alone upsets the ordinary views with regard to the calcification and desiccation of the fœtus being necessary for the preservation of a fœtus retained in the abdominal cavity. According to Sappey, 'infants which after their death are retained indefinitely in the abdomen of the mother owe their preservation to the physical conditions of their imprisonment, which give them a refuge from atmospheric germs.' "—*Philadelphia Medical Times*, November 3rd, 1883.

The Treatment of Neglected Abortion.

Dr. V. Idelson thus writes in the *London Medical Record*, Nov. 15, 1883:—

"In the *Mejdunarodnaia Klinika*, May, 1883, pp. 296–309, Dr. A. A. Muratoff, of Moscow, discusses the management of those cases of abortion in which some portions of the ovum are retained within the womb, and undergo there decomposition, threatening septicæmia. Of course, there may be no question of what to do in such cases. The obstetrician must remove the remnants of the ovum as quickly as possible, and disinfect the uterus. But how is this to be done? How is the uterine cavity to be reached, with its dangerous contents, through the os, which is usually found closed? Of all the means proposed and used for dilating the cervix in similar cases, sponge-tents are regarded by the author as the most harmful, for, 1, they act too slowly when every minute is precious; 2, any discharge absorbed by them rapidly undergoes putrefaction; and, 3, they cause irrita-

tion of the cervical walls. Laminaria digitata, also, acts very slowly; besides, it easily falls out from the cervix. Tupelo-root dilates the os much more rapidly than sponge or laminaria. Thus, according to Dr. A. Solovioff, while a tupelo-tent reaches its maximal swelling in four hours, a laminaria-tent, of an equal size, does so only in fifteen to twenty hours (see his article in the *Mediz. Obozr.*, May, 1880); but it is very difficult to find tupelo-roots of larger size.

"Basing his arguments on five years' experience, Dr. Muratoff emphatically recommends dilatation of the uterine cervix by means of a metallic dilator. As the best instrument of this kind, he regards Sims's three-valved dilator. Dr. Muratoff's practice is as follows:—After washing out the vagina with 2 or 3 per cent. of carbolic solution, he freely anoints the instrument with 4 per cent. of carbolised vaseline; he introduces its valved end into the cervix, and begins to turn the screw which serves for opening the valves. The first three or five full turns are made without any pause; but from the moment when the patient has felt a sharp pain, he proceeds with dilatation very slowly, making only half a turn at a time in every ten minutes. As a rule the valves are open to their utmost extent in three or four hours. The dilator is left in this condition for a quarter of an hour, and then closed and withdrawn. During the process of dilatation, the author makes repeated intra-uterine injections of a warm carbolic solution, through a double-current catheter. After the withdrawal of the instrument, bimanual expression of the uterine contents is tried. If one attempt be not sufficient, the remnants of the ovum are without any further delay removed by one or two fingers introduced into the womb.

"The writer eulogises the results given by this method of gradual (but still relatively rapid) dilatation in *all* cases of neglected abortion. The presence of any inflammatory processes in the parenchyma of the uterus or in the vicinity of the organ does not contra-indicate the use of metallic dilators; on the contrary, it vitally indicates instrumental dilatation. The latter inflicts no violence on the cervical tissues, and, accordingly, never gives rise to any considerable reaction. In a few cases, indeed, Dr. Muratoff saw a slight temporary rise of temperature and some increase of pain about the sexual apparatus after the operation. But in a great majority of his cases the dilatation, with subsequent emptying of the womb, was immediately followed by a marked improvement both of the local and of the general conditions: the patient's temperature steadily and quickly fell to the normal level, rigors and pain disappeared, the uterine discharge rapidly lost its offensive odour, and the uterus underwent uninterrupted involution."

The Ether Douche or Lavement for Local Pain.

Dr. C. H. Hughes writes:—"A paragraph in the *Medical Times* of the 10th of February, 1883, referring to the ether spray in the cure of neuralgia, prompts me to call attention to the fact that ether lavements have been employed by me in all painful surface-affections for many years, whether with or without inflammation, but mainly in neuralgic affection. In facial, sciatica, and cervical neuralgias, no remedy except galvanism has given me such signal satisfaction during the past ten years of my practice in neurology. These lavements will cure some cases of recent origin; they will relieve all. I use the ether douche, not the spray, and Dr. McLane Hamilton is in error in his reference to my treatment of the intense pain of cerebellar abscess by ether spray. In the case referred to, which I reported in 1877 (*Journal of Mental and Nervous Diseases*, October), I simply poured the ether on the head so copiously as to benumb all sensibility and restore a state of ease and mental tranquility to a patient absolutely maddened with pain.

The ether douche or lavement in trigeminal neuralgia is quite uncomfortable to many persons, on account of the unpleasant impression of the ether on the nose and eyes; and when applied to the supra-orbital region great care should be taken to keep the ether out of the eyes by laying the head back and covering the eyes with a handkerchief. If the ether should get in the eyes, the patient should be cautioned not to rub them, but simply to sponge the eyes with cold water and wait patiently till the ether evaporates. The same is true in regard to ether getting in the ears.

There is no need of a spray apparatus for ether. It should be used freely in quantities adequate to the effect desired. It should be poured on the part till relief is obtained. I apply it in this way to the motor regions of the head and down the spine in general or unilateral chorea likewise.

No better agent can be employed for cephalalgia and for acute muscular tremor than the ether douche or lavement. Of late years I have heard of the ether spray, but the ether *douche* or lavement has been with me a most common and efficient agent in the local therapy of pain, especially superficial pain, for more than a decade, ranking with electricity, and better than mechanical vibration."—*Philadelphia Medical Times*, September 8th, 1883.

Adonis Vernalis.

Dr. C. W. Tangeman thus quotes from *Wien. Med. Blätter*:—"Adonis vernalis, although used empirically in southern

Russia as a remedy in dropsy, had never been thoroughly investigated until quite recently, when Prof. Botkin made a thorough study of it at his clinic. The following is a short resumé of B.'s elaborate article, which was first published in the *Arch. f. klin. Med.* After a series of experiments it was discovered that only in certain kinds of dropsy, or rather dropsy due to certain causes, in cases where the œdema was due to a disturbance in the compensation and activity of the heart, the remedy acted very satisfactorily. The heart-beat increases in force after the use of adonis vernalis, and the size of the heart rapidly diminishes; the heart sounds and murmurs, especially the presystolic and systolic murmurs in stenosis, are more marked and distinct. The heart rhythm is more regular and somewhat slower; therefore the pulse is slower, and in most cases the pulse wave fuller and stronger. The secretion of urine is markedly increased, amounting to a change of from 300—400 ccm. to 2000—3000 ccm., a ten-fold increase of the watery element. All deposits disappear, specific gravity diminishes and the urine has a very pale color. There is an absolute increase of the chlorides and urates, the body weight diminishes and the œdema disappears rapidly; the dimensions of the liver decrease, cyanosis and dyspnœa disappear, and respiration becomes full and regular.

"In the largest number of cases great relief was experienced; at the end of the first day, complaints were less frequent, and in the course of a few days they disappeared entirely. Adonis vernalis has a good effect on cases also where heart disease is of a secondary nature, following chronic Bright's disease, etc. In cases even where the activity of the kidneys was very low and the œdema was well marked, it was very seldom that adonis vernalis did not give relief, provided the heart action was diminished and the blood pressure lower than normal.

"We must append the history of the following case on account of its extreme interest: A common laborer had been taking adonis vernalis for nearly two months and felt very much relieved; the heart diminished in size; the congestion of the lungs, which was well marked, almost disappearing entirely; the œdema of the legs and the ascites disappeared entirely; palpitation of the heart and dyspnœa diminished so much that the patient was discharged from the clinic and returned to work. The remedy was dispensed in the following way:

℞ Infus. adon. vernal. ex. 4.00 ad. coll. 200.00.
Ol. menth. pip., gtt. 2.

M. S. One teaspoonful every two hours."—*Therapeutic Gazette* (Detroit), October, 1883.

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